THE

WESTERN JOURNAL

OF THE

MEDICAL AND PHYSICAL SCIENCES.

OCTOBER, NOVEMBER AND DECEMBER, 1833.

Essays and Cases.

Art. I.—Epidemic Cholera in Yucatan.

An account of the Epidemic Cholera, in Campeche, and other parts of Yucatan, in a letter from Dr. Henry Perrine, *U. S. Consul, to the Editor.*

Consulate, U. S. A. Campeche, 20th Sept. 1833.

Dear Sir,

To-day for the first time, I have read your account of the Cholera in Cincinnati last fall. The only medical periodical of the United States which I have seen since my departure from New-York in Oct. last, are the 21st and 23d Numbers of the Philadelphia Journal of the Medical Sciences, which arrived ten days ago. You perceive, therefore, that I could not have been influenced in my treatment, by the reports of your physicians, as the Asiatic, Malignant Cholera entered Campeche, *officially*, on the 24th June, and ceased, as an epidemic, on the 21st July.

You talk about the frightful mortality it occasioned during six weeks in Cincinnati. If the truth were known, I believe that Campeche, with a less population, would be found to have

lost as many inhabitants in a single day, as you lost in a month. *Officially* we buried only about four thousand in four weeks, and not more than four hundred on the most fatal day. Estimating the whole population remaining in Campeche at 20,000, the mortality was nominally but twenty per cent. In a village only five miles distant, along the coast, where there was no medical assistance, at least 40 per cent of the original number perished, but as the greater proportion fled at the beginning, you can estimate how dreadful was the havoc among those that remained. Some villages and plantations have been entirely depopulated—while others have been very slightly affected!

The regular rains set in very late at Campeche, but as soon as they commenced, the epidemic began to decline. It then extended to Merida, where it appeared with much less malignity, but endured more than double the time. In Campeche it indeed spread with the violence of a hurricane. The buildings of the city and suburbs extend above three miles along the sea shore, and are bounded on the southeast and west by a semicircular range of hills, all of cavernous limestone. The city proper is surrounded by high walls, having four gates opening at the cardinal points, and is fortified with cannon, and garrisoned by soldiers. But when the Cholera came, the sentinels dropped down at their posts, and the guards at the gates—which were then left open the whole night long.

Priests fell in the procession, while carrying the Saint or the Lord whose intercession they invoked. Devotees were attacked on their knees at the Altar, while soliciting the favor of the Virgin Mary. Candles burning before the images in their houses, pious pictures strewed on their beds—holy wooden heads and wooden hands on their pillows and on their breasts —all were of no avail. The houses were soon all closed, and the streets all deserted, except by those whom necessity forced to seek food, medicines or coffins, the Doctor, the Priest, or the dead-cart—sometimes all together. Very soon, coffins ceased to be made, and graves to be dug. An armed force alone, could compel assistance for the dying or the dead of the

hospitals. Propositions to burn the bodies, were substituted by shallow excavations in the sand of the sea shore, as a less laborious measure. The corpses of the most respectable persons were slung in net-hammocks to a pole, and carried by two men, to some separate hole which they scraped among the bushes.

The mass of dead bodies were piled up in loads like logs, and carted to the common ditch on the shore, where they were laid in rows and covered with a few shovelsfull of sand. The skeletons of several who attempted to fly, were found divested of flesh by beasts or birds of prey. A child apparently a month old, was found alive on the road side, but no traces of the mother were ever seen. Seven priests followed their flocks to unconsecrated graves. Famine accompanied the plague. Provisions advanced three or four hundred per cent. Crowds collected at the doors where corn was to be sold, but many were carried off by the Cholera before it came to their turn to receive a handkerchief full. Finally the living began to envy the dead. Happy the dead, was the general remark, they had some aid during life, something like interment after death—but we must perish alone and be consumed by dogs and buzzards in our dwellings.

But I did not begin this letter with the intention of troubling you with my undigested recollections of the Cholera in Campeche. These I have promised to Doctor Dewees, as soon as my health and occupations will admit my placing them together. My especial object was to thank you for the testimony which you have borne to the merits of Calomel in the treatment of this disease, and to refer you to my own experience in its favor. So strong and sincere was my conviction of its great curative powers, that on the 9th July, during the height of the Cholera, I addressed as long a letter as the times would admit, to Doctor Hubble of Merida. On the 13th July, I recommended the calomel treatment, in a letter by express, to the Governor of Yucatan; and on the 15th, I deemed it my duty to record the substance of my experience, in the form of an official letter, to the Secretary of State of the U. S. A. Copies of the last two or official letters, I have

forwarded to Doctor Dewees of Philadelphia: but even these do not express all the confidence which I now feel in the treatment of Cholera by *calomel alone.*

You must keep in view, that the Cholera of Campeche was the genuine Cholera of India, not the Cholera of Paris nor of New York. It had no *stage* of premonition, of reaction, of collapse. It was all one *exhausting march*, from the beginning to the end, to the exhaustion of death. The exceptions were but exceptions. I should as soon think of talking about the *stages* of reaction, or of collapse, in uterine hemorrhage, as in Campeche Cholera. Whether the torrent of blood or of water from the vessels, appear externally or remain internally, the result is the same—the patient continues sinking, wasting, exhausting till he dies! The flow of serum from the surface of the intestinal tube into its cavities, whether vomited or purged out of them or not, will drain away from the system, and sink the pulse, heat and life, as fast as a flow of blood. I should like to see the corpse of a Cholera patient whose bowels are not full of water, if they were not emptied by vomiting or purging during life. One patient will die on the stool, from a continued stream of fluid which is flowing *out of* his bowels, and another in bed, from an equal stream which is flowing *into* his bowels. In both the blood and heat are departing from the surface—both are becoming emaciated, cold and pulseless—but the latter is supposed not to be in as much danger, *because he has no discharges from his bowels!* My views then, you perceive, lead me to check the watery secretion *into the* intestines as soon as possible—whether it be or be not discharged *out of* them—and this serous flooding I am convinced, may be generally suppressed by large doses of calomel. I need not tell the Physicians of the West and South of the U. S. that the larger the dose of this medicine, the less is that ultimate or occasional effect called catharsis, and the longer the time before it appears. I need not inform many of them, that in a *large* dose it will check serous diarrhœa more speedily than opium or alum. I do not use the general terms, narcotics and astringents, because I believe that the classifying titles of remedies is as injurious to reasoning, as the classify-

ing names of diseases. To me they sound like technical slang whose theoretical associations always embarrass the judgement more than they aid the memory. For me it is sufficient to know, that 40 grains of calomel will check serous intestinal secretions—but whether it should hence be classed among the diffusible stimulants which calm irritation, or among the astringents, which contract the exhaling vessels, I neither know nor care. I know that in very many cases, where 40 grains of calomel have rested in the stomach of a choleric patient, that within half an hour his whole surface has become warm, his cramps have ceased, his vomiting and purging have not returned, and he has got well, with rest and toast water. I know that in these very cases, there was no necessity for tormenting the patient with stimulating frictions or plasters, nor with hot bricks, bottles, irons, or baths of either hot air, or hot water; nor with a load of bed clothes. His dose of calomel, his comfortable quantity of clothing, his desirable quantity of desired drinks until his appetite returned, and his rice or arrow root gruel a few days afterwards, constituted all his treatment.

On the 24th June, there were in Campeche, seven licensed practitioners of Medicine—viz. two old Spaniards, one young Spaniard, one young native of Havana, one old Frenchman, and two young Americans—one being a former student of mine, and the other a Physician who came with me from New York last fall. One old Spaniard left the city the first day, the young Spaniard shut himself up the first week, the other old Spaniard and the old Frenchman shut themselves up the second week—the young Havanese died about the same time—and the two Americans, besides myself, continued in the streets during the whole epidemic. *We* all used calomel—with this difference, that my companions generally prescribed twenty grains with one of opium, to be repeated every three hours—while I prescribed forty grains without opium, to be repeated as often as debilitating vomiting or purging occurred, even if it should be as frequently as every five or ten minutes. As the Spaniards and French, know little about calomel, and consequently have horrible fears of its effects, they never used

it, until their piddling remedies failed, and then finding that it would not cure *dying* patients, they gave themselves up to despair.

As my services were entirely gratuitous, I distributed them in such a manner as most to favor my desire for observation. I therefore assisted the Havanese in his hospital and other physicians in private practice, during the first three days, to see the effects of their treatment, prescribing myself only for occasional cases in which I could best watch the results of my own views. In this short time, however, the small powders of the two young Americans and the large powders of myself, began to excite public attention—so much so, indeed, that the friends would request me to send the powders, if I could not go myself. I then requested the other physicians to observe the cases treated with forty grain doses of calomel—and finally, on the seventh day (when the interments exceeded three hundred) I deemed it my duty to make the treatment as public as possible. As the procession of St. John of God, on Thursday, had not arrested the progress of the epidemic, it was determined on Sunday to try the powerful influence of the wonderful Lord of St. Roman, (the name of the Western suburbs in which the Cholera broke out, a few days after the return of a vessel from Tampico, with sick aboard.) The Senor de St. Roman was therefore brought with extraordinary splendor, from his church in the suburbs, to the Cathedral in the city. The authorities of all classes vied with each other in being his immediate servants and followers, and the streets were crowded with all the people that had strength enough to leave their sick relatives and friends. As the Lord was about leaving the Cathedral, I drove up into the public square—called out to all the members of the City Councils that I could see—and carried them with me to the City Hall. I bade one take the seat of the Mayor, and thus began, 'Gentlemen, I have not yet seen a patient die who has retained forty grains of calomel in his stomach an hour, if administered while heat and pulse were still present, &c." The result was, to order the printing and distribution of advertisements, the making and distribution of calomel powders—with

the directions to take and repeat forty grains, until one dose should remain in the stomach or the doctor should arrive. The commissioners in each ward of the city and suburbs, and the sergeants in each company of soldiers, were furnished with the powders to administer in every case where a physician was not at hand. Some citizens who, at the beginning, would not venture near a patient without a handkerchief sprinkled with camphorated spirits, at their nose, threw away their essences and their fears, and became the curers of Cholera with calomel.

Indeed these valiant volunteers saved more patients, than even we, the Calomel doctors, in proportion to the numbers they attended, as we were called to so many hundreds in a day, that we could rarely arrive at the bedside of any in time.

While the Calomel promised to hold out, when I saw a patient in the cold or pulseless state of exhaustion, I gave him a dose, not with the expectation of curing him; but with the view of relieving his cramps, checking his discharges, and thus enabling him to die with more decency and comfort to himself, and with less labor and distress for his friends. When the Calomel, however, become scarce, and it remained doubtful whether any could be obtained from Merida (40 leagues distant) I reserved the dose for another who should offer chances for recovery. At this period I was requested by a lady, who had lost five servants in succession, to see the sixth who had begun taking the doses of twenty grains of Calomel and one of opium, at three hours apart, but still continued vomiting and purging. Seeing the girl in an apparently desperate condition, I turned to her mistress with a forty grain paper, saying "Madam, it is better to reserve this for the next one that may be attacked in your house; and remember that the cure consists essentially in giving as soon as possible as much Calomel as possible. I have generally found, however, that at the very beginning, if a forty grain dose is retained in the stomach, it is enough, but it is better to err by giving too much than too little." The next day, the lady surprised me by saying that the servant was recovering, that she had given her,

after my departure, six doses of forty grains each, till the vomiting ceased, that her bowels were bound, and her kidneys were open, and her mouth very sore. I directed her then to drink barley water with a small quantity of cream of tartar, so as to keep up the current of urine, and secure one daily evacuation from the bowels. She had nothing afterwards but gruel. By the by, I had almost forgot to say that one of the greatest advantages of the Calomel cures, is, the durability of its effects, so that a relapse is scarcely ever known. Under other treatment, one half of the patients nominally cured, died of relapses, or had a lingering convalescence. Those who object to the use of Calomel for fear of a salivation, are unworthy of a serious answer. Admitting that in all cases it should occur and be in proportion to the quantity taken, I say, better a sore mouth than a cold grave. But in the majority of cases, salivation does not occur, and is no more liable to follow five hundred than fifty grains of calomel—if indeed *as* liable as five grains. I have seen much worse mouths after very small than very large doses of calomel—the latter operating most generally on the skin or the kidneys or both. In a killing disease like the Cholera, individuals must risk the peculiarities of their constitutions. When any of my convalescents, to whose mouths the Calomel had been invited by scorbutic gums, rotten teeth, or catarrhal fluxions of the cheeks, complained of the soreness or ulceration of their mouths, I relieved them by asking if they were acquainted with any in the same condition, who had been carried to the "Holy Field" or Campo Santo. But to return to large quantities of Calomel. On the 20th of July, at night, I went to the College of St. Joseph, to stay with some convalescing Priests. They carried me into a room, where lay a servant, who having been attacked in the morning, had taken during the day, three doses of twenty grains of calomel and one of opium, but had vomited all. His skin was as cold as marble—he had not the slightest trace of pulse—his cramps were very violent—he was very thirsty, and had that restlessness which generally betokens the approach of death. I therefore told them to let him die in the cool net hammock in which he desired to be, but

at the same time related what the lady had done to her female servant, when I had refused to prescribe. As he had no pulse at all, he was considered a still more legitimate subject for experiment. He was allowed to drink as much cold water as he pleased, and by midnight had taken twelve doses of calomel of forty grains each, after which, he vomited and purged no more. His pulse did not return till twelve hours afterwards, but without any thing else he got well and so remains at this date.

As this first case of recovery from pulseless Cholera, was the last pulseless case that I saw, I cannot, of course, say more about it than this, that it will encourage me hereafter to use large doses of Calomel in those desperate cases, which have heretofore been considered beyond the reach of every remedy and of all combined. In writing this to you, I take it for granted, that you have seen or will see the copies of my letters to our Department of State, and to the Governor of Yucatan, which I forwarded to Dr. Dewees. So difficult it is to make our northern physicians believe that medicines do not follow arithmetical rules, that calling ten grains of Calomel a cathartic, they infer, that sixty grains must produce six times as great a cathartic effect. Doctor C. S. an old respectable physician of New Brunswick, New Jersey, was endeavoring to check the Choleric discharges from the bowels of one of my early friends, one night in August, of the past year, by the same doses of laudanum which had proved ineffectual during the preceding day. As I was alarmed for his safety, I energetically insisted on the doctor's giving him a drachm of Calomel, assuring him that the ultimate cathartic effect of the Calomel, would only show itself late the ensuing day, if at all, in the shape of tea leaves, tar, or mud, while its primary and immediate effects, would be those he was seeking to obtain by *narcotics* and *astringents*. As the already secreted contents of the intestines, however, continued to be discharged in small quantities, during the first few hours after taking the Calomel, the doctor triumphantly pointed them out to me, as effects of the large dose of Calomel! I could only re-

ply, that the same logic would prove large doses of opium, to be purgative, in all cases were they do not immediately check a diarrhœa. A similar difficulty I encounter with similar doctors, in making them believe that ten grains of Quinine will reduce an elevated pulse, and moisten a dry skin, while one grain doses will irritate both; neither can they believe that Quinine can be used like Calomel, in fevers, in connection with bleeding, and other misnamed *antiphlogistic* remedies. All the generic terms of the Materia Medica and the Practice of Physic, are, in my opinion, great obstacles in the advancement of our profession. We extract blood from the veins, in directly opposite conditions of the system, with benefit, under given circumstances. In the one case, we are said to relieve, by reducing the pulse—and, of course, in the other, we should say, by elevating the pulse; but in fact, the reduction and the elevation, are equally the effect, and not the causes of relief. So with the remedies which are named according to the secretions which they most generally open. The sweating, for example, in fevers, is not the means but the consequence of relief. My first dose of Quinine, is generally followed by greater sweating than the second, and that than the third, because the latter have less of that disorder to counteract, which closed the secretion. But sometimes the nervous disorder is equally counteracted by the Quinine, without any perspiration, instead of which, the urine begins again to flow. In short, as all the visible phenomena of disease, are the consequence of imperceptible disorder, so all the perceptible changes, towards health, are the consequence of the invisible counteracting impressions of the remedy. You perceive I am trying to express my ideas without even using the convenient term of nervous system. For a long time physicians believed that Calomel cured diseases by *salivation*, which exploded opinion, is not a bit more ridiculous, than the belief that it cures fever by *purging*. Speaking in conformity with such opinions, I should say that in large doses, it cures by diaphoresis or diuresis, or both. All that I know about Cholera, is, that some imperceptible disorder, causes the discoverable phenomena of excessive secretion into the intestines, coldness of the surface, &c.

I infer that Calomel corrects that imperceptible disorder, because these discoverable phenomena cease when enough is timely applied.

Hence, I see little or no advantage in external frictions, plasters, heat, &c. which can only tend to counteract one or more visible effects of the invisible disorder—while the Calomel, invisibly counteracting that invisible disorder itself—the whole visible effects must necessarily cease. The Calomel, then, does not cure the Cholera by salivation, nor by catharsis, nor by perspiration, nor by diuresis, but by counteracting that invisible disorder, in which all the visible disorders of the patient depend. The consequent excessive secretion from the intestines, and skin, must be suspended—the suspended secretions of the liver and kidneys must be restored, and all the functions be placed in that equilibrium which they had lost.

In the Campeche Cholera, the progress was so rapid, and the patients so numerous, that bleeding would have rarely been used, had it even been advisable as an auxiliary in the treatment. As a curative, I presume no one has ever thought of trusting to it in the exhausting Cholera. I may see a case in circumstances similar to those which sometimes render bleeding a useful auxiliary in the treatment of hæmorrhage, but am not conscious that any such occurred in Campeche.

I have long since formed and expressed the opinion, that Quinine in large doses, often repeated, would cure the Cholera. The little use which I have made of it in Campeche, confirms that opinion. As my services were entirely gratuitous—the Quinine very scarce and dear—and the sick so numerous, that the flying visits to those who were visited at all, were very few. I could not, of course, trust any conclusive cases to the Quinine alone. For myself, however, and for particular friends, I used five grain pills, whenever a diarrhœal discharge occurred, which was generally suspended by three or four pills. In one case of violent Cholera, where, in five or six hours after a forty grain dose of Calomel, the vomiting and purging returned, a twenty grain dose of Quinine, apparently completed the cure. So in weakly or weakened persons, with cold or

sensation of cold, I have added a twenty grain dose to the Calomel forty grains—and have repeated five grains of Quinine, after every watery purging, or every half hour, until the surface was covered with a warm sweat. Should I have an opportunity of seeing the Epidemic, in such a form, that I can limit my services to half a dozen patients daily, I shall be disposed to give a fair trial to large doses of Quinine alone. The treatment by Calomel alone, is so very simple, that I should hereafter say to the public: Have an ounce of Calomel in every house, made up into ten grain pills. As soon as an individual is attacked with watery vomiting or purging, give him four to eight pills, (forty to eighty grains,) according to the violence of the symptoms, and repeat the same quantity after each copious or debilitating discharge from the mouth or anus. Cover the patient with as many blankets as may feel comfortable. Let him take any drink of any temperature that is most agreeable to his taste and stomach, as often as he pleases, but not in such quantities as to provoke vomiting, say in tablespoonsful at a time. Rub his spine well with coarse dry cloths, as long as cramps or vomitings occur. You *may* add red pepper to his ancles, over his stomach, and along his spine, till the physician arrives. To the physician, I should say, when you arrive at a patient thus treated, his vomiting, purging and spasms, will have probably all ceased, heat will have likely returned to his extremities, and his whole surface will as likely be covered with a warm sweat; in short, you will find him convalescing, instead of dying. *But* although vomiting and purging, both may have ceased, and the friends may not, therefore, have given more than one dose of Calomel, you may occasionally find the patient still sinking, his face emaciating, cooling, pulse failing, &c., in short, with all the other symptoms of exhausting Cholera. In this case, the flow of serous fluid into the intestinal tube has not ceased, and is exhausting him as rapidly as an internal flow of blood. In weakly or weakened habits, a small quantity of either extracted from the vessels, will prove fatal to the system, whether retained in or discharged out of the cavities of the body. If this secretion into the intestines be not speedily arrested,

your patient will speedily die with his bowels full of water. Repeat, then, the Calomel, every fifteen or twenty minutes, until natural warmth and moisture appear all over the body and extremities. We do not hesitate to give enormous doses of Opium in Colic and Tetanus—why shrink from giving proportionable doses of Calomel in the rapidly fatal Cholera? You will find that while it calms irritation, and checks excessive secretion in one set of organs, it increases action, and opens the deficient secretions in others. The greater the dose, the greater its anticathartic effects.

If Opium is an advisable auxiliary at all in Cholera, it is likely indicated by pain alone. If Calomel alone will cure the Cholera in one case, it should cure the Cholera in all similar cases, without Opium. If the irritation is calmed, and the spasms are counteracted in one case, by large doses of Calomel alone, why not in all cases by the same remedy alone? If it requires a certain quantity of this medicine, to counteract all the symptoms of Cholera, why not give the whole quantity in the shortest possible time? The Opium which I have used as an auxiliary in Cholera, has been more in conformity to the opinion of others, than of myself. It is true, that when the Epidemic began to decline, and common diarrhœas take its place, it was the only medicine that I used, but then it was per anum, and with the injunction that if the discharges should become suspicious, to swallow immediately a large dose of Calomel. To the public I said, in these cases, go to bed as soon as a diarrhœal discharge occurs, and take nothing but toast water, until it ceases, but insert also a pill of opium, in the rectum, after each deposition; and if the discharges be not then speedly checked, or should be accompanied by a sense of debility, take a large dose of Calomel, and receive no food until hunger returns, when you may use rice gruel or arrow root, until you feel entirely well.

I never saw such a people as the Mexicans for feeding the sick. The first question put to the doctor is, not what remedies, but what food the patient must take. Hundreds were killed by stuffing them with soups and gruels, as fast as they were vomited or purged, to prevent the patient dying of

debility. I soon became so angry, that the moment I entered a house I shouted "*Si me nombren alimenti a debilidad non receto.*" If you name debility or aliment, I will not prescribe. Twenty four hours in bed, with toast water, were generally sufficient to check these diarrheal *after* dinners of the Cholera.

I was somewhat prepossessed, at the beginning of the Cholera, in favor of external heat and moisture. I now am only in favor of the *trial* of it, for fifteen or twenty minutes, in the shape of a vapor bath, whose heat and moisture is participated by the lungs. On the 4th day, of the Cholera, I ordered the respirable vapor baths at the hospital of San Juan de Dios. The assistants were so pleased with its effects, that they declared in case of being themselves attacked, the vapor bath should be their first remedy—but poor fellows, when the time came, there was no body to administer the bath to them—and they died without even being seen by the superintending physician, who soon followed them to the grave, under the Broussais practice. I had warned him against the falsehoods of this notorious Frenchman—I showed him the soaked surface of the intestinal tube of the first patient who died in the hospital on the 24th June, at midday—he had even seen the recoveries under large doses of Calomel—but when he fell sick, the Spanish-French prejudices and fears overcome him—he sent for the old Spanish and the old French Doctors, and I did not see him, till they had abandoned him, and he was dying. If one could have been amused during such an epidemic, he would have been diverted at the capricious vacillating practice of the Spaniards and the Frenchman, while they continued in the streets—Musk, Assafœtida, Columbo, &c. &c. in succession, or combined. Every day something new, which was abandoned the next, until all were given up in despair. Even the famous *Guaco* became despised for its inertness.

24th September. As the vessel has not yet been despatched, I may as well add such facts and reflections as occur to me, because using a manifold letter writer, however tiresome this communication may be to you, the simultaneous copy will at least be useful to my memory. You are aware, that not above one fifth of the population of Yucatan, is composed of persons entirely white. The native Indians, called the Mayas,

are not only a distinct race, from those of the United States, but also differ as widely from the other Indians of Mexico, as the French from the Russians. They are indolent and ignorant—humble and good natured, and are the laboring citizens or peasantry of the country. During the first week very few indeed were the persons of entirely white blood, attacked by the Cholera in Campeche. In one village, the mortality was so completely limited to Indian blood, that the natives imagined they were poisoned by the whites, and were on the point of revenging themselves by force, when luckily the death of a few white inhabitants, enabled the Alcalde to convince the Mayas of their error. Negros and their mixtures form a very small part of the population, and were as great sufferers as the Indians—possibly greater—in proportion to their numbers. Even the different shades of Indian and Negro blood, seemed to invite the disease in the ratio of their darkness. All the servants of large families were, in some instances, swept off without exception, while the white members were not even attacked.

I perceive that you are strongly opposed to the doctrine of contagion in Cholera, and so am I, but there are many circumstances which tend to show that the poison is transportable. Have we not facts to show that a vessel arriving at a port in the United States from the West Indies, with a healthy crew and passengers, may, nevertheless, contain enough poisonous atmosphere in her hold to produce the Yellow Fever in persons employed to discharge the cargo? In October last, during the Cholera of New Orleans, vessels came thence to the ports of Yucatan, without bringing the disease, although in November last, at Liral some sailors actually died on board with the Cholera. In March last, vessels came from Havana, and although aided by the trade wind, did not bring us the Cholera. But in June, a vessel came from Tampico, with sick on board, against the prevailing winds, quarantine regulations were eluded and in a few days afterwards we had Cholera in the suburbs of Saint Roman—the parish where the crew and effects were landed. The Cholera has ever since continued spreading from Campeche through the

Peninsula towards all points of the compass, and of course, to the Eastward, in the very teeth of the trade wind. The Villa del Carmen, however, about forty leagues to the S. W. *on an Island*, at the Laguna de Terminos, being enabled by its position, to cut off rigorously all communication, has hitherto escaped, although the Cholera has extended to the plantations on the adjacent shore of the main land. Some plantations to which no person has been admitted, have escaped the desolation of others around them, as we learn by persons who have left these still healthy positions, on the express condition of not returning until the Cholera should entirely cease in all places which they may visit during their exile. As very little travelling is done in Yucatan, and that principally by means of passports, it is very easy to trace the transportation of the disease from one point to another, and I therefore hope that when it shall have ceased in this Peninsula, we shall be in possession of facts enough to decide the question of the transportability of the Cholera poison. Whatever be the result, whether in favor or contrary to your present opinions relative to the origin and propagation of Cholera, I doubt not that you will be equally contented with the acquisition of fresh facts, relative to this mysterious epidemic.

You are doubtless aware, that the whole Peninsula of Yucatan is proverbial for its healthiness, owing, no doubt, to the peculiar dryness of its soil and atmosphere, with the wonderful uniformity of temperature, which is common to most shores of the miscalled torrid zone. Indeed every part of the coasts of tropical seas which has no marshes nor mountains to poison or chill its atmosphere, presents in its dry and equable temperature the means of health and enjoyment, which cannot be found in any part of the misnamed temperate but properly variable zone.

Driven into the slandered torrid zone, to find in its equable temperature the natural remedy for disease, induced by the variable temperature, which is the principal evil of all our existing States, and common to every part of the miscalled temperate zone, yet amidst all the numerous natural enjoyments of this delightful climate, I daily become more and more acquainted

with the innumerable unnatural sufferings resulting from the character of its inhabitants and of its government. As the wonderful uniformity of temperature, the extraordinary varieties of vegetation, and the consequent natural superiority for physical health and pleasure, enjoyed by the dry shores of a tropical sea, can only be adequately estimated by natives of the changeable north, after personal experiment, so the wonderful suavity of the governments, the peculiar characteristics of the people, and the consequent social superiority for intellectual health and happiness enjoyed by the United States of North America, can only be thoroughly appreciated by its own citizens after long residence abroad. Hence, having ascertained that the dry winter, the wet summer, the trade winds, the daily sea breeze, the nightly land breezes, and above all, the uniform temperature of this climate, extends several degrees north of the Tropic of Cancer, and consequently into our own territory, you will pardon my enthusiasm in repeating the conviction, that southern or tropical Florida, in climate, position, and government, combines more natural, social, and political advantages than any other portion of the world.

With these views of the superiority of climate and productions of the tropics, and of the government and people of the United States, and the peculiar position of the peninsula of Florida, giving it the advantages of both, the speedy population, and planting of its tropical extremity, is of immense national importance both to our healthy and sickly citizens. When remote from marshes which send noxious moisture into the air, or from mountains which disturb its otherwise equable temperature, its tropical seashore is the most healthy residence, not only for our citizens who are laboring under pulmonary disorder, but also for those who are suffering under hepatic disease. The common belief of the general insalubrity of the torrid zone, is a popular error created by the resorts and the reports of war and trade; the spots most frequented by commerce and of course most liable to be the seats of war, are generally surrounded by the local circumstances which would generate disease in every climate of the globe under

equal conditions of mental anxiety and corporeal exposure. But the very city from which I am writing—the whole peninsula of Yucatan—is proverbial for the dryness, healthiness of its atmosphere. The surface, which is level, calcareous and continually swept by the trade winds, has never been traversed by any epidemic but the present unaccountable Cholera.

Having read in the May number of the Philadelphia Journal of the Medical Sciences, the review of Johnson on the "change of air," I was pleased with the addition to the remarks of the author on the climate of Italy, and especially with the beginning of the "momentous enquiry to select the situations best adapted during the cooler months for those who have a tendency to or are laboring under pulmonary affections," to which might be added, and for the hepatic disorders equally aggravated by sudden vicissitudes of temperature, which are as common in Louisiana as in Maine. To the editor of that Journal, and to yourself, I therefore point out Cape Florida as the most eligible winter retreat, for our citizens suffering under diseases of variable temperatures, and through both your Journals, I would challenge my professional brethren, to show any situation out of tropical Florida, which combines as many advantages for such persons, when travelling in pursuit of health and enjoyment.

26*th Sept.*—Although well aware of the great influence of the mind on the body, I never conceived it to be so powerful as it has shown itself in the Cholera. One death was generally followed by several others among the sensitive community—not of relations nor house-mates only, for the acquaintances or friends were at least as frequently carried off, however different their temperaments or distant their residence. In the same family the cases were not proportioned to the debility of the body, but to the weakness of the mind. Keeping up myself always a cheerful countenance and even jocose tongue, when I found an individual whom neither my presence nor words would animate, I marked him as a speedy victim of the Cholera, in which medicines would be of no avail. In some instances I refused to visit such, assigning my reason to those relatives who exhibited more mental valor. On the othe

hand, the courage of one individual would save the rest. Col. Jose Mendez, former Judge of the District, made his will and died without any symptoms of Cholera, like the wasting of a candle. His sister, a female devotee, went off with hysterics on the same day, not on his account—but to join a female friend whom the Cholera had just destroyed. The brother, Pedro Mendez, Secretary to our Cholera Board of Health, always shuddered at the name of the disease before it reached the Peninsula—shut himself up when it arrived—and offered to serve me on his knees all his life, if I would save it. I told him that with his silly fears medicines could not operate; and when called to him six hours after his attack at midnight, found him cold and pulseless, and ordered him to dispose himself with the Notary and Priest. Dr. Santiago Mendez, another brother 35 years old, would have followed his two brothers and sister, had not his wife possessed the character of a Roman.—Neither of the dead, you observe, had suffered from grief for each other, but he was suffering sorrow for the three with a melancholy presentiment that all their large family must sink under the epidemic from similarity of constitution. While another brother, a Priest, and a sister were convalescing in the same house, with all the servants on sick beds, Mrs. Mendez was so much engrossed in their cases, being the only attendant, that she did not observe her oldest boy was sick during night, until she found him dying in the morning. She concealed her distress, and hurried off her husband to a room in the college of San Jose—and I accompanied him as I considered his life worth more than the lives of a hundred others. He was a liberal patriot, and what is still rarer in Mexico, an honest man. He had refused the nomination for Governor, and was elected vice Governor without his knowledge. In short, he is a man who I believe will be of more moral service to Yucatan, than any other ten inhabitants of the Peninsula. With the view of seeing him often, what little rest or nourishment I took, I sought at the College. About 2 A. M., however, on the second day he woke from a frightful dream, with a noise which startled me. The fright was immediately followed by a discharge from his bowels, which left him fainting in the

chair—indeed so lifeless did he appear, that the Priests, among which was a brother, fled—and I was left alone. I threw part of a bottle of wine in his face, shouted for help—carried him to bed—gave him 40 grains of Calomel—sent for his wife, went for lively friends—and without details—by mid-day he was out of danger—but without the words and deeds of his wife, he would have surely died. The bells had been tolling "rogativas" for 13 days, when the thought occurred to this heroic woman, of changing their mournful tones to the lively notes of a Te Deum.

Ascertaining that a less number of deaths had occurred the day before, on Saturday, than on Friday, I immediately called together the Priests, visited the Commanding General, and at noon the despairing population of Campeche was delighted at the surprizing but merry ringing of the bells, and firing of the cannon, which continued during the whole afternoon. Of its wonderful effects in arresting the Epidemic, you will be able to judge when I obtain the official list of burials —the ringing of the bells was repeated every noon, and at the end of the week I declared that the Cholera had ceased as an epidemic, but the authorities were unwilling to give clean bills of health till a week afterwards.

28*th Sept.*—A letter from the Alcalde of Cibalchem, a village 30 leagues to the South of East from Campeche—tells me that on the 18th of August, the Cholera entered so mildly that in 12 days they counted but 5 or 6 deaths to more than 30 convalescents—but that on the 2d inst, it attacked with such violence as to carry to the grave 15 to 20 bodies daily. None of the principal inhabitants however suffered until the 11th, when Dr. M. Privero was carried off by vomiting and purging, and the 14th when Dr. J. de la Cruz followed him with diarrhea alone, both wealthy individuals who endured but 9 or 10 hours. During the first fifteen days, the persons attacked nearly all got well, under any kind of treatment, but during the next fifteen days, up to the 19th inst., the date of the letter to me—out of every twenty attacked, not more than one, and at most two, escaped under every domestic care, (as there are no physicians there) for although the symptoms were

not alarming, not one lasted 24 hours. Thus says the Alcalde, requesting from me medicines and advice. So you perceive that in Cibalchem, the epidemic pursued a course directly opposite to its career in Campeche, where in the first fortnight its ravages were dreadful, and in the last fortnight comparatively trifling. To-day we are beginning to be alarmed anew, as two cases were reported day before yesterday, and two more have entered the hospital this morning. As the vessel is to sail for New Orleans this afternoon, it is doubtful whether I shall be able to send you any details.

I have the honor to be, sir,

Very respectfully, your ob't. serv't.

HENRY PERRINE.

DR. DRAKE.

ART. II.—EPIDEMIC CHOLERA IN COLUMBUS.

A brief history of the Epidemic Cholera as it appeared in the town of Columbus, and the Penitentiary of Ohio, in the summer of 1833. BY WILLIAM M. AWL, M. D.

I am about to appear as the brief historian of our late attack of Epidemic Cholera, at the request of several correspondents and a number of personal friends. It would seem, moreover, to be the duty of every observer, to communicate whatever may be likely to assist the medical historian in completing a monograph of this all pervading pestilence. To avoid repeating what has been already published and republished elsewhere, I shall sum up what I have to say in as few words as possible.

Towards the close of June, the disease was reported to exist in the vicinity of Winchester, a small village 12 miles east of Columbus, on the Ohio Canal;—introduced into the settlement, it was reported and generally believed, by a stranger who had been left from a passing canal boat. By the mercy of Providence, it did not continue very long, nor spread very

far through this unfortunate neighborhood. Nevertheless, the suffering was dreadful, both from disease and neglect, for a panic having seized the surrounding country, the affected spot was both proscribed and deserted, and most of those who sickened received little else than interment.

The first case among the citizens of Columbus, occurred on the 14th of July—it was under the care of a *Steam Doctor*, and proved fatal. This person, it was said, a short time before paid a visit to his Father, who resides in the *neighborhood* of the fatal district just mentioned, and hence a report and common belief, especially by those who consider the Cholera to be contagious, that the poison was conveyed into our town by this unfortunate individual. But his father lives 10 miles from that district, and it is not established that the deceased either saw or had communication with any one laboring under Cholera,—nor had he himself any connection with the second victim, who shortly afterwards took the disease in a different and distant part of the town. Besides, it is certainly true, that the occurrence of many unusually severe affections of the bowels, together with one or two very suspicious cases, had given ample warning of the destroyer's approach. With myself, therefore, and I believe most others, it is an established fact, that the distemper was unfolded simultaneously in different parts of the town, and that too independently of contagion.

For two weeks after its commencement, the epidemic was comparatively mild; spending its principal force among the convicts of the State Penitentiary; in which place it was severe, though of short duration, for after the first of August no new cases were reported.—There was a short respite, about the same time, for the citizens of the town,—when the usual intermittents made their appearance. These circumstances led the board of health to report favorably, and it was confidently believed, by the people, that the danger was over. But the whole proved to be a delusion, for the disease soon reappeared with redoubled force, in connexion with Fever, and during the two successive months, they raged in combination with great mortality.

Of the causes which seemed to favor this extraordinary duration of the epidemic—so plain and correct a statement is given, by a committee appointed of the board of health, that I cannot refrain from introducing it into this account.

Final Report of the Board of Health.—The undersigned, members of the Board of Health of the town of Columbus, being now happily released from the further performance of the duties of our appointment, by the restoration of general health, deem it a duty which we owe to the public to submit, in this our final report, a few general remarks in relation to the alarming disease which has recently afflicted our town.

The first case of Cholera occurred among us, on the 14th day of July, and the last on the 29th of September. Between these dates, the total number who fell victims to this disease within the limits of the town, was 92, of which 11 were among the prisoners confined in the Penitentiary. The total number of inhabitants in the town at the time the Cholera appeared among us, is supposed to have been about 3,500, of whom nearly one fourth part removed, temporarily, from the town, during the prevalence of the disease. It is worthy of remark that the Cholera continued in this place considerably longer than it has usually done in towns similarly situated, and comparing with it as to population. We have reason to believe that this may be attributed mainly to imprudent exposure; to improper living, both in regard to quality and quantity of food; and especially to the free use of highly stimulating medicines, recommended and taken under the mistaken belief, that they were antidotes against attacks of the Cholera. Indiscreet indulgencies in the use of fruit, and of crude, unripe or watery vegetables, are ascertained to have preceded in almost every instance, the attacks of the Cholera, and are believed to have had a direct and powerful agency in producing the disease. We are also fully satisfied that excess in eating and drinking was a prolific source of Cholera, and especially fever.

Of those who made free use of Cholera syrup, (a heating medicine recommended by a certain class of practitioners as a specific for the prevention of Cholera) a far greater portion were attacked with the disease, than of an equal number of persons who did not make use of it; and of those who were attacked after using this medicine in any considerable quantities, very few recovered. We have no doubt that a free use of this heating medicine was the immediate cause of many cases of obstinate fevers.

In support of these opinions, we refer to the fact, that in the Penitentiary, where strict rules in regard to diet were enforced, and where the use of heating remedies as means of prevention were prohibited, a very large proportion of those attacked with Cholera were cured, the disease was in a short time expelled, and the convicts subsequently enjoyed good health.

It is also true, that few among the temperate and regular livers, who

avoided the use of the heating medicines recommended as preventives, were attacked either with Cholera or any other serious disease.

As some of the members of the Board of Health have been called upon by persons at a distance for information as to the success of the Thomsonian or Steam practice in the treatment of Cholera, we conceive it to be a duty which we owe to mankind, thus publicly to state as the result of experience in this place, and of our own observation, that no reliance can be placed on that system of practice, either for the prevention or cure of this formidable disease.

In the early part of the time, during which the Cholera prevailed among us, many of our citizens placed much reliance on the Thomsonian remedies. This confidence led them to disregard the precautions so generally recommended and deemed of so much importance in the prevention of Cholera, by the regular physicians. In several instances the premonitory symptoms were temporarily checked by the use of the Thomsonian remedy. This operated to increase the mistaken and fatal confidence which was reposed in these remedies, and in our opinion contributed greatly to increase the number and violence of the cases, and to prolong the continuance of the disease among us. These remedies only checked or disguised the symptom; they did not remove the cause of the disease. And when like a smothered fire, it broke forth with increased violence, fully developed, the remedies of that system were found in almost every instance, to be utterly powerless.

During the latter part of the time that the disease prevailed here, very few persons could be found who were willing to trust their lives or those of their friends in the hands of the Thomsonian practitioners: and the extraordinary mortality which occurred in the families of those who practiced physic on the Thomsonian plan, and among those who placed such entire reliance on their skill, sweeping off in several instances, nearly whole families, affords melancholy but strong evidence of the inefficiency and worthlessness of remedies in which such entire and fatal confidence has been placed. We are neither of us physicians; and in making these remarks, we disclaim all personal interest and feelings, as well as personal hostility towards those who practice on the Thomsonian system.

P. B. WILCOX,
ALFRED KELLEY,
J. PATTERSON,
WM. MINER,
C. HEYL,
J. BUTTLES,
J. NOBLE.
} *Board of Health.*

Columbus, Nov. 2, 1833.

NOTE.—It is to be understood that all manner of Botanical, Reformed and Steam-Doctors, are included under the name of Thompsonians in the above report, as they all consulted and practised together during the Cholera.

Independent of a countless variety of real and imaginary minor complaints, the whole number of sick, during the continuance of the Cholera, may have amounted to between four and five hundred—of which, perhaps two hundred and fifty had actual Asiatic Cholera. The deaths from fever and other disorders, during the same period, were about sixty, including many young children. It is worthy of remark, that the temperate and prudent, and especially those who resided in comfortable circumstances, with good houses, very generally escaped. The Epidemic appeared to surround, as it were, the whole town,—to prey upon its circumference, while the central and principal street, suffered comparatively but in a very small degree. And in the adjoining village of Franklinton, west of the Scioto river, which contains some three or four hundred inhabitants, and is distant but one mile, there originated but two very slight cases, both of which terminated favorably.

By order of his excellency the Governor, I was selected as assistant physician to the State Penitentiary; and as the practice of Dr. Wright and myself proved generally successful, the following particulars in relation to that establishment, may not prove uninteresting.

The disease first appeared among the convicts on the 19th of July. Very few escaped without more or less disturbance in the bowels. One hundred were taken down with the premonitory symptoms and confined to the hospital, of whom forty had decided Cholera, and eleven died; there was not a single case of fever while the Cholera lasted. By the first day of August it ceased altogether, and before the 20th, the prison was reported to be in ordinary health. The whole number of criminals was two hundred and three. From seventy-five to a hundred were regularly detailed for out-door employment, on the erection of the new prison, exposed to the sun and weather; these were all retained within the walls after the sickness commenced, and the prosecution of the work for the time being suspended. A strict prohibition of every kind of vegetable was enforced, and the men were confined to the most temperate and rigid use of bread, rye-

coffee and light soups, made principally of mutton. The buildings were frequently and thoroughly scrubbed and white-washed; and every room, together with the different entries, prison-yard, out-shops, gutters, privies, &c. &c. constantly sprinkled with the chloride of lime. Fumes from burning rosin and tar mixed with the atmosphere in every apartment, and a heavy bituminous smoke, from a half-smothered stone-coal fire, was permitted to envelope the out-shops and prison-yard on every morning. The beds and the bedding, both of the sick and the dead, were uniformly washed in hot soap-suds, and wrung out of a solution of the chloride of lime; and *be it remembered* that neither they who washed for the sick, or the attendants upon the diseased, the guards about the prison, the keeper or the physicians ever took the Cholera; and at one period, upwards of sixty men were confined, within touching distance of each other. Finally, the hospital department was freely ventilated, kept as clean and comfortable as possible, and well supplied with steady and faithful assistants, and the moment a man was known to be indisposed, he was ordered into it for examination, and, if necessary, placed under immediate treatment.

Of the eleven who died of the Cholera, nine had broken constitutions from previous intemperance, the 10th is said to have been sober, and the 11th occasionally took a drink, whenever he could get it. And what is not a little remarkable, the first nine drunkards had returned to punishment, for a second commission of crime.

In regard to general pathology, I have nothing to offer upon the subject of Cholera—*it is the Cholera*, and that seems to be the amount of what is as yet known concerning it—nor is it necessary for me to be minute in a regular detail of our treatment, more especially as we can add little or nothing to what is already before the public. Some practical remarks on a few of the various remedies, which have been tried for this disease, will, therefore, bring to a close this hastily written paper.

The *lancet* was seldom admissible in well formed Cholera. With a view of producing reaction, I am satisfied, from direct

evidence, that it is utterly useless. But in the accompanying fevers, which of course wore the livery of Cholera, and were frequently characterized by distressing irritability of the stomach, and pains through the bowels, the loss of a few ounces of blood was quite indispensable, and occasionally the operation had to be repeated.

Emetics are highly important agents in the beginning of a case, particularly if the stomach is full, oppressed, or very sick, with chilliness, or distress about the head; or when the attack commences with severe cramps, more especially of the abdominal muscles. But their indiscriminate use was attended with some hazard, especially in rapid cases; and truth compels me to state, that I have undoubtedly known them hurry on the fatal stage of collapse.

Epispastics with me, were great favorites, particularly when applied to the epigastrium. If that region was tender, I always blistered it extensively, with as much expedition as possible; and I greatly prefer blisters to any other application that can be made to the same place; they not only remove the tenderness and irritability of the stomach, which are very seldom absent in this disease, but they rouse up the energies of the liver, and promote the salutary operation of medicines. Vesication is most speedily and effectually accomplished, by first covering the part with a sinapism, mixed up with equal parts of oil of turpentine and sharp vinegar. This plaster must be suffered to remain on, until the skin is perfectly reddened, and then the strong epispastic ointment is to be substituted. The blister should be from 10 to 12 inches square.

Calomel is the sheet anchor—the *sine qua non* in the treatment of Cholera; nor, if we except the blue pill, has it any substitute, *Lobelia and Bay-berry, Cayenne pepper and No.* 6, all to the contrary notwithstanding. It is true there are cases in which it fails—but every thing may and will fail in many cases of Cholera. Twenty-five or thirty grains of calomel, with about as many drops of laudanum, may be given at once, after which I prefer to repeat about the same quantity every two or three hours, until ninety or a hundred grains are tak-

en; should it not operate in twelve or fourteen hours, castor oil or calcined magnesia may be administered, but there is no occasion for its hasty operation on the bowels; it will seldom salivate; and if, peradventure, such should be the case, there is an end to the disease, for the patient is cured. In proof of this statement, it is only necessary for me to mention the fact, that there occurred, from first to last—only one sore mouth in the prison, and the medicine was used in every case, in company with cold water and ice, for constant drinks. Every other remedy appears to be inferior to calomel. Warm applications and frictions, sinapisms, rubefacients and injections, are all proper, and may help to sustain life for a few miserable hours; but until this mercurial regulates the secretions and removes the blockade of the liver, so that bile can reappear in the evacuations, there never will be any genuine amendment.

Astringent Injections, when rice-water stools are copious and the patient appears to be sinking, should be instantly administered, and retained as long as it is possible. Unquestionably they are among the most useful and important of our remedies, to suspend the evacuations and save the fleeting strength. They should never be given warm, always *perfectly cold;* and, if necessary, repeated again and again, until they can be retained. Decoctions of oak bark, log wood, or gum kino, will answer the purpose. Perhaps the solution of sugar of lead, with the addition of a tea-spoonful of laudanum, will be found to succeed better.

Camphor may be occasionally useful, but all diffusible stimulants invariably do harm.

The inspissated bile of the ox, appeared to be useful in two cases, but manifested little power in subsequent trials. I used venous injections in one protracted case, without any benefit.

Dry frictions must be actively employed, to remove the clammy perspiration and restore the energies of the surface; but it is entirely unnecessary that the skin should be flayed off with improper roughness.

Time, vigilance and perseverance, are every thing in the

treatment of Cholera; for if the case is abused or neglected, it hurries away to the state of collapse, for which there seems to be no remedy.

Columbus, Ohio, November, 1833.

Art. III.—Spinal Irritation.

An account of a case of Spinal Irritation, with Rheumatism and Hysteria, by Charles C. Hildreth, M. D., *of Zanesville, Ohio.*

Mrs. K. H., aged 28, having recently returned from a malarious district of country, consulted me concerning an Intermittent, not long since contracted. I found her in the third paroxysm, with fever of a high grade, violent pain in the head and side, and acute sensibility to pressure on the false ribs of the left side.

Her pulse being full and strong, and her skin hot and dry, I directed venesection nearly to syncope, with much apparent advantage. Profuse diaphoretics followed the use of the lancet, with prompt alleviation of pain. Her bowels not having been moved for the last three days, I prescribed calomel 20 grains, and Dover's powder 10 grains, mixed, to be taken immediately, and followed in five hours by cathartic pills, till free purging took place. On instituting a more minute examination of her case, I ascertained that the type was quotidian; that she had recently recovered from a tertian of seven weeks duration, and that her general health was very much impaired. Her menses, she informed me, had been suppressed for the last two years. In the meantime she had been afflicted with the usual routine of hysterical symptoms; such as palpitation of the heart, globus hystericus, syncope, &c.

The succeeding paroxysm, attended with hysterical delirium, was so violent, that her attendants supposed her dying. For the purpose of inducing quietude, I gave her the usual antispasmodics, with the desired effect. I was then, for the first time, induced to examine her spine, which (as I anticipated) was found acutely sensible throughout nearly its whole extent. Pressure over the upper cervical vertebræ, very much increased the pain in the head, which being of a superficial character, and confined to the scalp externally, I at once perceived to be of spinal origin, consisting in a neuralgic affection of the sub-occipital and posterior branch of the first pair of cervical nerves. Pressure over the upper dorsal vertebræ very much aggravated the gastric distress, globus hystericus, &c. By pressing on the lower dorsal vertebræ, the pain and sensibility of the side were much increased. When I made pressure over the lumbar spine, the patient complained of acute pain in the knee, and wished me to desist. The joint being swollen and quite sensible to pressure, constituted a very fair case of rheumatism.

Having now perfectly satisfied my mind concerning the nature of the case, I at once proceeded to its radical treatment.

The upper dorsal being the most sensible part of the spine, I directed a blister to the six or eight upper vertebræ, and a turpentine embrocation to the remaining portions; and also exhibited ten grains of sulphate of quinine, during the febrile intermission, with the expectation of preventing the recurrence of the paroxysms, but was disappointed. The irritation of the cantharides, together with the previous depletion, (which was no doubt directly injurious,) gave rise to another hysteric paroxysm, attended with long continued syncope, and followed by a chill and slight fever; much more mild, however, than the preceding. The patient's stomach was also very irritable, frequently rejecting its contents. On the morning following, (Sept. 3d,) I found the blister discharging freely; stomach much less irritable, and hysterical symptoms much alleviated. Applied another blister over the

lumbar spine, and directed 8 grains of sulphate of quinine, before the expected paroxysm. This had the effect of promoting its recurrence.

Sept. 4th. No pain has been felt in the side or knee; but acute pain in the head last evening, followed by profuse diaphoresis. The patient feels much debilitated. Directed 6 grains sulphate of quinine to be taken daily, and a blister to the cervical spine, for the relief of the headache, which was evidently neuralgic, as before explained; a more nourishing diet, and occasional stimulants.

From this time the patient improved rapidly. The blisters were kept discharging for several days, and were reapplied to the several tender portions of the spine, until all these anomalous, neuralgic, hysteric, and rheumatic affections disappeared. Her catamenia, if not finally suppressed, will probably be restored under the use of aloes, iron, and aromatics.

Remarks.

This case I deem interesting, on account of its complicated character: presenting all the symptoms of spinal neuralgia, hysteria, rheumatism and intermittent fever, collectively. I need not say that all these symptoms depended upon disease of the spinal column, except, perhaps, the intermittent, which, primarily, at least, had a malarious origin. I apprehend, however, that much difficulty would have been found, in permanently curing the intermittent, without first removing the spinal irritation. Her previous attack of ague, she informed me, was not checked until a severe salivation had been induced; which continued to within a few days of her last attack. The rheumatism, which in this case was of a purely neuralgic character, constituted, perhaps, its most interesting feature. During her previous attack of the intermittent, she had, as she informed me, suffered rheumatism in the elbow and wrist; and that the pain was confined almost entirely to the paroxysm. The knee joint alone has been affected since she came under my charge. During the febrile exacerbation, she has complained much of the pain and

tenderness of the joint, which was greatly increased by pressure upon the lumbar spine, over the origin of the affected nerves.

I think the profession much indebted to Dr. J. K. Mitchell, for his pathological and practical investigations, concerning the spinal origin and treatment of rheumatism.

To the prompt relief afforded by cups over the origin of the affected nerves, in acute rheumatism, I can testify from personal observation. And although a blister does not usually produce such obvious relief, as the abstraction of blood by cups, yet in the present case its action was indisputable. The tenderness of the spine, which I have never before observed in rheumatism, was in this case well marked; pressure over the origin of the affected nerves, very much increasing her sufferings; clearly proving, in this case, at least, the rheumatism to be of spinal origin. The acute pain and sensibility of the side, had, no doubt, a similar origin; being a neuralgic affection of the intercostal nerve. Pressure over the lower dorsal vertebræ, aggravated the pain; and the febrile paroxysm not only increased the pain, but rendered the integuments so sensible, that the patient could not bear the least pressure of my hand upon her side. The rheumatism, and this neuralgia of the side, were certainly strikingly analogous, and justify us in referring them to a common cause.

The hysterical symptoms were in this, as Dr. Tate supposes them to be in all cases, dependent on spinal disease.

Since the suppression of her menses, she had suffered very much from palpitation of the heart, syncope, delirium, and various kinds of gastric distress, such as flatulence, acidity, &c. From all these symptoms she obtained no permanent relief, until, by the repeated application of blisters, the spinal irritation was removed. It gives me pleasure to add, that the patient now enjoys much better health than she has had for some years past.

Oct. 5, 1833.

Art. IV.—Fistula of the Stomach.

Notes of a case of Fistulous opening of the Stomach, successfully treated, by Dr. John H. Cook.

Sometime in the month of February, 1832, Dr. Bardwell and myself were called to visit the widow D., aged 39 years. We found her, as near as may be, in the following condition: A fistulous opening, immediately by the side of the umbilicus, into which a buck shot might have been readily passed; on removing the bandage, a gill of bile was suddenly discharged; after which, a small quantity of a different (the gastric?) fluid, came slowly away. These discharges were attended with great pain, on account of their acrid quality. The whole surface of the abdomen was excoriated, inflamed and intolerably painful. We introduced a flexible catheter, its whole length, 13 inches, before meeting with any resistance, when the extremity suddenly met with an obstacle. By pushing it against the resisting body, or even by slightly agitating the instrument, strong efforts to vomit were produced.

Withdrawing the catheter, we desired her to drink a glass of water; she did so, and in 20 seconds, the *whole* was discharged through the fistula, as we ascertained, by measuring it. The direction of the fistula was upward, and slightly inclining backwards, with about the same inclination to the right side. We came to the conclusion, that the opening within, was at, or about, the pyloric orifice of the stomach; and that the catheter entered the stomach, and pressed against its cardial portion. The patient even felt it there, and applied her hand externally over that part.

Treatment.

Taking a large beef's bladder, we cut it open, longitudinally, spread it well with adhesive plaster, and after washing the inflamed surface, and dressing it with basilicon spread on fine linen, we applied the bladder over the abdomen, and

made an opening over the fistula, through which the matter might escape. We then applied a bandage and compress, and directed that it should be reapplied immediately after each discharge. We advised mucilaginous drinks, and a diet of rye mush and molasses, and nourishing enemata. The patient was much emaciated for want of proper nourishment, as every thing passed off undigested through the fistula. No evacuation had taken place in the natural way, for ten days previous to our visit. The external irritation of the abdomen soon healed, and the bladder was then applied to the skin as a protection, and continued there with the happiest effect. The bandage was gradually tightened, and a compress of a cylindrical form was laid over the course of the fistulous canal. By these means our patient regularly, but slowly recovered. In a few days the alvine evacuations were restored to their natural outlet, and the discharges from the fistula began to decrease. In 30 days the opening was closed, and the fistula apparently obliterated. Several months have elapsed since that event, and she continues in excellent health.

All we could collect from her as to the history of her case, was this: Six months before, in one of the south-east counties of this State, she was attacked with constipation and violent pain at the pit of the stomach, which resisted every remedy, till the 19th day, when the fistula showed itself.

Pendleton, Madison Co., Indiana, Nov. 1833.

Art. V.—Worms in the Bladder.

An account of a case in which a large number of Worms were discharged from the Bladder and the Bowels. By Dr. Leonard Bardwell.

A man aged 30 years, applied to Dr. Cook and myself, in the month of August, 1832, for medical aid. He was an em-

igrant from the south-east of North Carolina, where he had been subject to intermittent fever, from his infancy up to manhood. For the few last years he had followed the sea, and while on a voyage to the E. Indies, was attacked with a painful and peculiar sensation in the region of the bladder. His digestive functions soon became much impaired, and his general health declined. The pain increased sometimes to perfect agony, attended with difficulty in urinating. He consulted a number of medical men, who told him his case was stone, and he was under that impression when he consulted us. Adopting the same opinion, we advised, in succession, various lithontriptics, with little or no benefit. Then chylopoietic alteratives and tonics, with similar bad success. By this time he had begun to complain of pain in the bowels and region of the liver, with some difficulty of breathing. A vague idea that he had worms, came into the mind of one of us, and we determined to try a vermifuge. Accordingly, we gave an active dose of calomel at night, and directed him to eat nothing but gruel, which brought away nineteen large worms, near twelve inches long. On the night following, he took one ounce of castor oil, with the same quantity of spirits turpentine; and, before day, discharged between 70 and 80 more, of the same appearance. During the operation of the oil, he felt strongly disposed to make water, but could not discharge even a drop; and the distress in the bladder became intolerable, attended with the peculiar kind of sensation, such as heat, tickling, itching, or gnawing, such as he had experienced before, and indeed first suggested to us that he might possibly have worms. After daylight, he called for the vessel, to make water; and commenced discharging bloody urine and small worms, which came so thick as to require pulling away. He certainly discharged, at that time, at least two thousand, which gave great relief. The oil and turpentine were continued until many thousands must have been evacuated. Meanwhile his health rapidly improved, though he continued to discharge worms of a similar kind, for six months afterwards. He is now perfectly healthy.

The worms which came from the bladder, were from one-

half to three-fourths of an inch in length; about the thickness of a very large horse hair, and of a dark, dirty, white color, with a black head, rather large in size. They possessed considerable activity, could crawl on the ground, or on a board; and many of them lived 24 hours after they were discharged, and were seen by numerous persons. I am sorry that we had not preserved a specimen of them.

Pendleton, Indiana, Nov. 1833.

Art. VI.—Geology of Ohio.

Observations on the Geology of the central parts of the State of Ohio, by John L. Riddell, A. M.

I must premise, that I am not aware any one has given to the scientific world, very extended observations on the geology of this part of Ohio: and with candor I must confess, that my own opportunities for the collection of facts on this subject, have been quite limited.

The expanse of country constituting the central portions of this State, seems to form a continuous and level plain, which is frequently intersected by valleys and ravines, that correspond with the water courses; but no where are these depressions or gorges to be found of any remarkable depth. In no country, perhaps, can the formation of valleys be more satisfactorily ascribed to the slow, but certain agency of running waters. Many thousand years, perhaps, have witnessed their gradual excavation, by the transporting power of floods.

Without descending to nice distinctions, we may notice three well-marked varieties of soil, which correspond with what some geologists have denominated, the *Modern Alluvion*, the *Ancient Alluvion*, and the *Analluvion*.*

* Eaton.

The *Modern Alluvion* comprises those rich bottom lands, which border the low banks of the rivers and creeks. The *Ancient Alluvion* is altogether the most predominant. The materials of which it is composed, seem to have been tranported by rapid and powerful currents of water; and the territories over which it is spread, are such as to prohibit the idea of referring its origin to causes analogous to those now in operation. The great number of primitive bowlders which occur in this formation, constitute its most remarkable feature. They may be observed of various sizes, from the smallest pebble, to the dimensions of huge, irregular, partially rounded masses, of many tons weight. They are particularly abundant at the bottom of valleys, where the earth has been gradually washed away. Among them can be observed almost every variety of granite, gneiss, hornblende, sienite, quartz, &c. Very seldom indeed, can specimens of the more soft or fissile minerals be found; as mica slate, steatite, or chlorite; and their absence accords well with the supposed alluvial origin of this formation: for the mechanical violence which these bowlders and rocky masses must have suffered, in being transported to their present situation, would have been amply adequate to reduce the softer portions to a fine state of comminution. This variety of soil then, with its mineral contents, evidently belongs to the "*erratic block group*" of De la Beche. It is not a peculiarity of this particular region, or this State; but traces of it can probably be observed in nearly all parts of our country, as well as in other portions of the globe. As suggested by De la Beche and others, it was anciently produced, in all probability, by a powerful and overwhelming inundation of waters, rushing along from the regions of the north.

The *Analluvial detritus* (analluvion of Eaton) occurs here and there; especially where the pyritous shale, a rock that easily disintegrates, happens to be uppermost. In such localities, the ordinary action of meteoric agents on the slate, cooperating with the spontaneous changes which the plentifully disseminated pyrites undergoes, results in reducing the whole mass to fine incoherent particles, having much the appearance

of ordinary earth. This kind of soil is by no means abundant.

The indurated rock strata consist of *Limestone*, *Graywacke* or sandstone, and *Pyritous shale:* and in descending, they overlay each other in the order I have enumerated them.

The *Limestone* is generally of a bluish gray colour, and not very remarkable for its compactness. In its upper portions there is a plentiful occurrence of hornstone, either disseminated in nodules, or forming distinct and limited strata. In many places the waters have worn deep channels in the limestone rock; and the precipices thus formed, are oftentimes bold and impressive in their appearance. And what sometimes contributes to give additional interest to these gorges, is the occasional appearance of dark, rude caverns, overlooking the waters below; as can be seen in the vicinity of Dublin on the Scioto. The mass of this rock seems, in a great measure, made up from the *exuviæ* of marine animals. It is almost impossible to find a solitary hand-specimen of the limestone, in which the impress of numerous crustaceous and radiated animals cannot be distinctly traced. *Encrinites*, *Productæ*, and *Orthoceratites*, are perhaps most abundant. The virtuoso, who is fond of collecting organic remains, will find very good specimens of *Encrinus*, *equicyclus*, *E. transversus*, *Orthocera circularis*, *O. striata*, *Cyathophyllum vesiculosum* and *Columnaria sulcata* (*Eat.*) He will meet with an abundance of *Bellerophon cornu-arietis*, (*Sowr.*) and several other fossils resembling it: now and then a perfect *Echinus* may be found, still more rarely the *Calymene Blumenbachii?* (*Al. Brogn.*)

So far as my observations have extended, the graywacke and clayslate do not occur in a uniform order of superposition; but where they are seen in connexion, it generally happens that the uppermost strata are sandstone. In some localities, thin strata of this rock can be observed to make a number of alternations with the slate.

The *Graywacke* of this region is characterized by a hue of light gray, inclining to blue or green. Like the equivalent rock of other countries, it consists apparently of quartzose particles united by an aluminous cement. It is generally so

soft, of such an even structure, and so free from cracks and hard spots, that it may be easily wrought; and when fashioned into an arch, or a tombstone, it has a very neat and appropriate appearance. In many localities, its consistence is such as to render it well adapted for grindstones. This rock not unfrequently contains thin laminæ of mineral coal, strongly impregnated with bituminous matter: and the occasional occurrence of imperfectly preserved relics of tropical plants, reminds the observer of the prevalent and very reasonable opinion, that the temperature of these northern latitudes, in very ancient times, was much higher than it is now.

The *Pyritous shale* or clay-slate, of some, graywacke-slate, aluminous schist, pyritiferous slate &c. of others, is so universally known, as to render description almost unnecessary. It generally has a dull shade of blue, is chiefly aluminous in its composition, and is almost destitute of grit. It is naturally rather soft, and when freely exposed to the air, is extremely apt to crumble into small fragments. The disintegration is essentially, if not entirely, owing to the large quantity of disseminated iron pyrites. This mineral, which bears a delusive resemblance to gold, is often met with in masses of several pounds weight. It occurs in profuse abundance in smaller pieces, and forms, no doubt, a share of the more intimate composition of the slate. As it is a bi-sulphuret of iron, (consisting of sulphur two equivalents, iron one,) the spontaneous changes which it undergoes when exposed to air, in contact with the alumina of the slate, give rise to the formation of crude alum (sulphate of alumina) and copperas, (proto-sulphate of iron); and so very common and plentiful are these natural products, that bushels may be easily collected in very many localities. It must be obvious to the manufacturing chemist, that the copperas and alum of commerce, might be prepared here with unusual advantage; the country around yielding all the materials requisite in the preparation.

The most remarkable feature of the pyritous shale, is the frequent occurrence of solid imbedded *globes*, varying from the size of a mere pebble, to that of a sphere ten feet in diameter; and there are localities a few miles from Worthington,

where I think they can be found to exceed that measurement. One of the situations to which I refer, is a deep and tortuous ravine, two miles north of this village, and opening into the valley of the Oolentangy river. The forest-clad cliffs of this singular gorge, generally maintain an altitude of seventy or eighty feet, and are made up almost entirely from the pyritous shale. The most of these globes are met with about fifty feet above the level of the Oolentangy; and I can assure those who never saw them, that they here present a spectacle, unique and strange: for one can at first, with difficulty persuade one's self, that they are exclusively the work of nature; so strikingly do they resemble the warlike contrivances of man. Were it not for their gigantic and variable dimensions, one could easily imagine they were cast in furnaces, and shot into the banks from loaded cannon. Indeed they give an air of enchantment to those solitudes, which is not a little heightened in damp winter weather, by the luxuriant growth of rein-deer moss, (*Cenomyce rangiferina,*) that fixes itself on the declivities of the disintegrating slate. Very many of the globes lie loose in the bed of the stream; some of them entire, and some (owing, perhaps, in many instances, to an original want of integrity,) in scattered fragments.

I suspect, from what I can learn, that these strange productions of the earth may be met with in various and distant parts of the State. Dr. Hildreth informs me, that in a visit to the Barrens, west of the Scioto river, he observed the same mineral appearance in the banks and bed of Deer creek, which are entirely composed of loose slate, containing considerable sulphuret of iron. "The same formation" he observes in a letter, "continues, without doubt, from Worthington to Brush creek in Scioto county, near the Ohio river, there rising into considerable hills, and affording alum and copperas in abundance; and immense numbers of these globular bodies, of all sizes, from a nut to a hogshead. As the slate decomposes, they tumble out and roll to the foot of the hill." Col. Kilbourne, of Worthington, states that he has seen these stony spheres, on the banks of Huron river, which emp-

ties into Lake Erie. They are likewise plenty in the neighborhood of Newark.

As regards their structure, a few appear equally solid throughout, but most of them are much less compact within. The soft and fragile interior of many, contains a nucleus of equal hardness with the external crust; while not a few are entirely hollow, with the exception of containing a disconnected, hardened core. The traveller, on his way from Columbus to Sandusky, can observe an interesting appearance presented by these spheres in place, two miles and a half north of Worthington, a few rods below where the turnpike bridge crosses a stream of water. The ledge of slate which borders the stream, at this place is fifteen or twenty feet high; and two or three yards from the bottom, five of these concretions may be seen, seemingly just ready to roll out of their shaly beds. They are situated in a line, and occupy, apparently, the same horizontal plane. Four of them (being of equal size) are about two feet and a half in diameter, and near two rods distant from each other. Of these, three are so broken as to present a hollow interior, while one only is entire. The remaining one is smaller than its fellows, and considerably fractured. These bodies, in general, are completely globular, yet many of them have the form of an oblate spheroid; the shorter diameter, when in place, being vertical. They frequently have raised lines passing around them horizontally, at short intervals, like parallels of latitude. These lines, and the intervening spaces, point out their connexion with the laminæ of slate. I possess one, four inches in diameter, encrusted entirely with pyrites, and completely encircled with a raised equatorial ridge, which gives it wholly the appearance of being a work of art. Two spheres, of equal or unequal dimensions, are often seen to coalesce and form a single body, each retaining its globular form, with the exception that the quantity of stony matter is increased about the line of junction. If a recent fracture of the solid exterior portion be examined, a distinct fibrous structure can be observed, running from the surface directly towards the

centre. If the fragment be held in a proper position with respect to the light, a glimmering lustre is apparent, owing to the reflection of light from crystalline laminæ, that traverse the radiating fibres at an angle near 45 degrees. Such specimens generally have an appearance similar to dark, fine-grained basalt. Taking the mean of a few trials, I make the specific gravity of this portion, 3.99, snow-water being assumed as unity. I have in my possession, a perfect sphere, less than an inch in diameter, the surface of which is entirely covered with cubical crystals of iron pyrites. It was thrown up in digging a well, from a depth of twenty feet. The interior of these spheres, is more variable in its character and composition: it is generally rather soft, and of a light gray, earthy appearance, frequently containing crystals of calcareous spar. The flexion and displacement of the layers of slate, where these bodies occur, are such, in my opinion, as clearly to indicate the relative antiquity of each. The arrangement is such as would probably have been effected, by the gradual increase of the sphere from a small nucleus; for the layers of slate mostly curve around the globe, both above and below; yet those laminæ which strike the surface at nearly right angles, unite and lose their continuity on the globe. They are frequently invested with a thin coating of iron pyrites, possessed like the proper substance of the globe, of a fibrous structure. Basalt is said sometimes to assume the globular form, but I am not aware of its ever being associated with the clay-slate, in such isolated masses.

Respecting the origin of these bodies, I should perhaps be prudent to remain silent, and leave others to determine. With due deference, however, to our eminent geologists, I will submit the following opinion: It seems to me that these concretions have been formed by the "silent though powerful" agency of electricity. In what manner the galvanic arrangement is made up, I will not presume to decide. It may be by the numberless alternations of pyrites and slate, or by the contact of different rock strata, on a gigantic scale. It is probable that the pyritous shale undergoes a kind of transformation; that the elements composing it are merely aggre-

gated in a more solid and durable manner. But this I confess requires much further investigation. Consistently with such views, I cannot but regard these imperceptible operations, as going on at the present time: and in my opinion, the unfinished, or rudimental condition, in which many of these productions seem to be, gives no small degree of plausibility to the idea. This transition state, from the fissile shale to the indurated sphere, is well exemplified in an excavation for the turnpike, near Kinnear's tavern, midway between Columbus and Worthington.

In conclusion, I hope that some professed geologist will give these subjects a share of his attention.

Worthington, Ohio, Nov. 9, 1833.

Editorial Note.

It will be recollected that the title of our Quarterly embraces the word *physical*. We consider it honorable to the profession, that in all new countries, where the physical sciences are under the necessity of depending on other branches of philosophy, they should have selected Medicine. In truth, the medical and physical sciences belong to one great department of human knowledge—*that of nature*. The physiology of man, is but a branch of general physiology; and to be well known, the latter must be studied. Animals and plants are intimately connected with the earth—drawing from it their subsistance, and modified by it, in many of their characters and properties. Not a few of the diseases which arise in the former, especially in man, are the effect of its waters and its exhalations. Thus geology and mineralogy contribute many aids to the study of ætiology; and the medical history of no district of country, can be regarded as complete, unless it embrace an account of the soil and springs, with a general statement of the rock formations immediately beneath. Still further, there is a propriety in our knowing what the particular region in which we practise the profession, can contribute to the materia medica. Under every as-

pect, therefore, in which we can view this matter, it seems admissible to render a *medical* journal, in a new country, the vehicle, to a certain extent, of papers on its Mineralogy, Meteorology, Botany and Zoology. Such are the views, which have induced us to publish the interesting paper of Mr. Riddell, on the geology of the central parts of Ohio; and we would take this opportunity, to invite from others, in the valley of the Mississippi, contributions of a similar kind, or on other branches of its physical history.

Mr. Riddell's observations on the rolled pebbles and blocks of primitive rock, which lie scattered over the central parts of Ohio, have reminded us of some of our own inquiries and speculations on the same subject, nearly twenty years ago. They are contained in a letter to the late Abbe Correa, our Minister from the Court of Portugal, and were published in the 2d volume of the new series of the Transactions of the American Philosophical Society, printed in 1825. As a supplement to Mr. Riddell's paper, we shall venture to make the following extract:

1. Fragments of fossil wood, which have been dug up at various depths, from ten to ninety feet. They are not mineralised, and *appear* to have belonged to trees of the same species with some of those which grow in our existing forests. I have not detected among them any tropical plants.

2. Grey, siliceous, and calcareous sand, which composes a great portion of the plain, and has probably resulted from the destruction of arenaceous limestone rocks, many strata of which exist in this country to the north and east.

3. Veins of blue and yellow clay, afforded no doubt by the marl which in many parts of the limestone tracts, separate the laminæ of that formation.

4. Rolled and angular fragments of blue shell limestone, detached from the strata of the surrounding hills. Many of these are large tabular masses, and seem to have been brought only a short distance. None of them indeed could have come down the river more than one hundred miles, as this variety does not extend beyond that limit to the east. They are very numerous.

5. Polished *debris* of that kind of grey sandy limestone which the Scioto and Little Miami rivers traverse near their sources, and which have evidently been rolled hither by the copious streams that formerly

ly flowed in the valleys of those rivers. These fragments are as numerous as the last.*

6. Rubble and boulders of grey variegated and micaceous sandstone, with minute fragments of coal, aluminous slate, and shivers, generally rendered smooth by attrition. These are from the country up the Ohio, where such strata are found *in place*. They are not so numerous as the two last.

7. Foreign or adventitious *debris*, consisting of granite of different colours, *gneiss*, *micaslate*, *hornblende*, *sienite*, *wacke*, *porphyry*, *trap*, *jasper*, *petrosilex*, *flint*, *agate*, *quartz*, and various other ancient species. These are of every size from small gravel to *boulders* fit for street and court paving. They are not angular, but have suffered attrition, until the distinctive characters of many fragments are almost obliterated, and a fracture must be made before they can be known. They are blended intimately with the other stony wreck, and have not hitherto been found to occupy any distinct bed. The source of this *debris* of primitive and transition strata can be best ascertained by tracing its distribution over the country. I have observed pebbles of this kind on the Hudson river at West Point, where the plain is composed in part of rolled fragments.

But as they are in general larger than those found on the Ohio, less worn and polished, have a greater proportion of mica slate pebbles, which do not seem to bear rolling to a great distance, and are mixed with rubble from the sand stone mountains of Katskill, they should, I think, be considered as being detached from the adjacent primitive rocks. An additional reason for this opinion may be drawn from the silence of our excellent friend Professor Mitchill, as to the *debris* of ancient strata among the alluvion of the upper parts of the valley of this river.† It seems probable then that the currents which rolled and polished these fragments, did not extend laterally as far as the basin of the Hudson. We do not however depart from it westwardly but a short distance, before we meet with the ruins of primitive strata. An observing traveller, Mr. J. C. Warren, informs me that he saw them on the Chenango, a branch of the Susquehanna, and observed them near all the streams in passing thence by the town of Erie on the lake, and along the Allegheny river to Pittsburg. Mr. Thomas Nuttall had previously noted the same thing during a journey in which he visited most of the principal rivers and lakes in the western part of New York. So much for the north-east. To the south-east and south, the valley of the Ohio seems to constitute the boundary of this *debris*. Beyond that river, there are indeed but few water-worn pebbles of *any* kind; and the narrow alluvions of the streams are generally argillaceous. I have travelled over most of the northern and north-eastern parts of Kentucky, and do not now recollect to have seen any foreign rolled pebbles. Mr. Warren has visited the north-western portions of the same State, and at my request was particularly attentive to this point, but did not discover any. The acute and

*These, on account of the whiteness of the lime into which they burn, are collected and used for that purpose.

† See Medical Repository, Vol. I.

observing Mr. Nuttall travelled through the centre of the same State from north to south on foot, but after leaving the valley of the Ohio opposite Cincinnati, he found none of these fragments until he approached the French Broad, in Tennessee, whose source is in a primordial formation. To the west and south-west, the currents of the great valley have transported the *debris* much farther. Mr. Nuttall has traced it only to the mouth of the river St. Francois; but my late lamented friend Dr. Goforth met with it in the form of gravel, not many miles above Natchez. To the north-west, it was found by Mr. Nuttall on the Missouri, as far as the great bend at the Mandan villages, beyond which he did not ascend. From the mouth of this river to Erie in Pennsylvania, the same persevering naturalist met with it on the shores of all the rivers and lakes which he visited, and from the information which he has kindly afforded me by letter, it appears that this *debris* is larger and in greater quantities in that region than this. Within the limits here sketched, it is found in the vicinity of all the streams, and forms, with the ruins of the surrounding strata, the bases of all the fertile and level prairies. We are hence, I think, justified in the conclusion, that its origin was in the north, and that it was brought and deposited on the surface of this country by currents which in ancient times flowed from beyond the lakes to the Gulf of Mexico, and of which it may be regarded as the sign and effect.

A more recent formation than many of the alluvial beds contained within the limits just defined, is the stratum of loam spread over the surface of our hills and valleys in an *overlying* position. This appears to be the same that in the north of Europe is denominated *geest*,* and which Mr. De Luc considers as the last deposit made by the sea before its final retreat. Sir Humphry Davy regards the soil or friable argillaceous surface of Great Britain at least, as having resulted from the disintegration of the rocky strata underneath.† There are doubtless but few rocks that would not be mouldered by exposure to the action of the atmosphere, and where the waters, before their final retreat, made no protecting layer, the argillaceous surface may be fairly referred to decomposition. But there is much reason for believing that the greater part of the *geest* of this country has subsided from fresh water, and is a true alluvion. It varies considerably, I acknowledge, in different places, but its essential constituents, clay, sand, and yellow oxide of iron, combined in varying proportions, seem still to be present. It is indeed destitute of the remains of aquatic animals, and might not therefore be supposed to have had the origin here intimated; but the old alluvial beds which have manifestly been accumulated by water, either salt or fresh, are almost equally destitute of aquatic exuviæ. On the other hand, it exhibits, in some places, an obscure stratification; it does not abound particularly in the undecomposed fragments of the rocks over which it is spread; its colour and density are nearly the same from bottom to top, and it envelopes, as we shall presently see, along with more or

* L'Histoire de la Terre et de l'Homme, tome v.
† See his Elements of Agricultural Chemistry.

less gravel, large masses of adventitious rocks, conditions that sufficiently characterize it as a distinct and real *formation.* It has been washed by the rains into the lower parts of the valleys, where, becoming blended with the recent alluvion of the streams, it encloses the bones of the arctic elephant, great mastodon, and other extinct quadrupeds. On the south side of the Ohio, it is only from four to eight or twelve feet deep; but to the north of that river, its thickness becomes so great, that the flœtz limestone is but here and there seen projecting through it.

The deposition of the *geest* seems to have been the last operation which the waters of the north performed upon this region; and was of course subsequent to the excavation of the valleys, as no deposit could have remained upon their acclivities, while the agent which formed them continued its action. You are, sir, already apprized, that to this formation belong the great blocks of foreign primitive, transition, and old flœtz rocks, which have excited in travellers so much astonishment, and which, in one point of resemblance at least, approximate the region south of Erie, Huron, Michigan, and the other lakes, so closely to that which stretches from the southern shores of the Baltic sea.

These masses, in the neighborhood of this place, are for the most part solitary; but in the interior of the State, it is not uncommon to find them grouped into heaps which are slightly covered with soil; and it is, I suspect, an aggregation of this kind, on one of the islands of Lake Huron, that a British officer mistook for granite *in place.** The size of these masses extends from that of gravel and pebbles to the diameter of eight or ten feet. The larger blocks are frequently found *upon* the old alluvial plains, but never, that I have understood, *within* them. Their geographical range is over the same region with the smaller foreign *debris* of our valleys, but more limited to the south-west. I have never seen a single block on the opposite side of the Ohio, and am not informed that any have been observed lower than the thirty-ninth degree of latitude.

I do not entertain a doubt that these fragments were enveloped in large fields of ice in a region far beyond the lakes, and floated hither by the same inundations that brought down and spread over the surface of this country, the *geest* in which they are imbedded. In the southern parts of this formation, they are not found; but this should be attributed to the influence of climate. The ice to which they were attached could not of course pass a certain latitude; and from the great increase of these masses as we advance towards the north, it would seem that many of the icebergs suffered dissolution long before they arrived at this *maximum.* Future observers will no doubt trace them to their parent strata in the arctic regions, as Von Buck has traced those which are lodged on the shores of the Baltic. The ice islands of the Atlantic ocean may reasonably be supposed to bring down, and deposit on its bed in the Temperate Zone, primordial masses, similar to those spread over some parts of this and the Europe-

* See Thompson's Annals of Phil. for March, 1816.

an continent. These islands are, I believe, not often seen further south than the forty-first degree, near two degrees north of their southern boundary here. This is probably attributable to the gulf stream; but for which the larger tracts of ice would undoubtedly attain as low a latitude as the southern limits of the primitive blocks in this country: and hence a probable conclusion may be drawn, that the temperature of the northern hemisphere has undergone but little change since the remote epoch when this part of the continent was for the last time subjected to inundation.

Art. VII. Shooting Stars.

An Account of a remarkable exhibition of Shooting Stars, seen at various and distant places, on the night of Wednesday, 13th of November, 1833. Collected and arranged by the Editor.

As our journal is devoted to the history of every natural phenomenon, which may be *supposed* to be connected with the causes of disease, we propose to record the principal facts, relative to the late brilliant and unexampled display of shooting stars.

In all ages, Epidemic diseases have been suspected, by the people at large, and by the more imaginative members of the profession, to be in some way or other connected with great operations in the earth or the heavens—such as volcanic eruptions, earthquakes, comets, shooting stars, and other phenomena, the causes and effects of which are obscure, or not reducible to any of the *known* laws which govern physical operations. In the year 1800, our learned countryman, Mr. Noah Webster, travelling back to the Noachin Deluge, presented the profession with two volumes of book authorities, to show that great epidemics, are always preceded, accompanied or followed, by striking events in the globe, its atmosphere, or the ether, which stretches out beyond, and in which the planets revolve. The occurrence of the late phenomenon, so soon after the prevalence of the Epidemic Cholera, will undoubtedly be regarded by the Webster school, as affording support to their favourite theory; and, as it is impossible to *disprove* this assumption, we shall admit the propriety; recording that which they will regard as an important item

in the history of these epidemic times; and shall therefore proceed to collect from the public journals, and arrange into a narrative, the principal facts relative to that splendid exhibition.

All the world are familiar with the phenomenon called a shooting-star, seen in every country almost every fair night; often in considerable numbers, but in succession. It is obvious the late exhibition was nothing more than the same phenomenon multiplied to an indefinite number, and presenting in a single night, all the varieties of appearance that the solitary shooting-star offers in a succession of centuries.

We had not the good fortune to witness this sublime and beautiful spectacle, and in becoming one of its historians, must transcribe from others. We shall make these transcripts from such a number of the publications in the gazettes of the country, as will afford a permanent record of the aspect which the heavens presented over various and distant places, beginning with Cincinnati. The phenomenon seems to have commenced, at this place, before midnight; and gradually attained its maximum of brilliancy from 3 to 5 o'clock, though it evidently had not ceased at daylight. A writer in the Cincinnati Gazette gives the following statement of his own observations:

"Yesterday morning, about a quarter of 4 o'clock, there was a brilliant exhibition in the heavens. The whole firmament was incessantly traversed, in all directions, by luminous streams of electric light. They all appeared to proceed towards the earth, commencing at various elevations; from about 30 degrees from the horizon to the zenith. The streaks of light were of different intensity, sometimes contracting into a slender line, at others presenting the appearance of a broad rectilineal flash. Frequently when approaching the horizon, they exhibited, at their termination, an appearance somewhat similar to an explosion, leaving, for some seconds, a rich mellow light, blended with all the hues of the rainbow. They moved with various velocity—sometimes rapid, at other times slow in their progress. In their course they ordinarily resembled shooting-stars. The entire vault exhibited the scene of a magnificent pyrotechnic display."

At Springfield, in this State, the editor of the Pioneer observed that—

"The meteors were mostly of the usual size, but at times a larger and more glaring ball would start forth, leaving a broad, bright flame on its track, and shedding its light over all. Their course held generally, and we believe without exception, towards west by north. We could detect no change in the appearance of the atmosphere. The morning was mild and clear. The shooting of these lights prevailed north of this, but not, as in the south, at the extreme verge of the horizon. We "took the field" of observation at about four o'clock, and continued on the *qui vive* until the "greater light" put out these lesser lights. We understand that this phenomenon was to be seen as early as midnight. If it prevailed more at one time than at another, during the two hours that we observed it, it was at five o'clock."

A writer, who is a physician, gives in the Somerset, Ohio Post, the following account:

"The splendid meteoric phenomenon of the morning of the 13th inst. having attracted considerable attention, some account of it, and a few words on meteors in general, may perhaps be entertaining. I did not observe it much before 5 o'clock, but as the coruscations were said to be then as brilliant as they had previously been, by those who had witnessed them for upwards of an hour, a description of them from that time may perhaps suffice for the whole phenomenon. The heavens were then lighted up by numerous scintillations streaming in every part, and apparently in every direction; but upon more attentive observation, I perceived they all flowed in the directions of radii from a common centre, which centre was about twenty-five degrees south-east of the zenith. They commenced their courses at various distances from it, and appeared to be directed towards the horizon, with the exception of those between their centre of repulsion and the zenith, which appeared to direct their courses upwards; but I imagine that their *apparent* directions were occasioned by their great distances from us, and that they really shot in lines parallel to the earth's surface. They moved with the velocity of what are commonly called falling-stars, and always, as far as I could observe, in right lines, leaving luminous traces behind them. They differed in magnitude and brilliancy; the luminous lines left by the smaller ones, faded quickly, whilst those which were large, cast a strong light upon the objects around us, and left streaks which continued for several minutes, perhaps nearly as much as ten in some instances, which streaks gradually became bent in various shapes, as if acted upon by wind, and faded away into nebulous patches, like faintly luminous clouds. No sound that we could distinguish was emitted by them. They generally became fainter and less numerous as day broke; probably by the superior light eclipsing them. There was a slight frost at the time, with a light air stirring from the west, from which quarter a stronger

wind with rain had proceeded for two or three days before. The heavens were cloudless, and continued so the greater part of the ensuing day."

An observer at Warren, in the eastern end of this State, gives the following account of them, as seen at that place:

"They resembled somewhat, the rockets discharged in displays of artificial fire-works, or more, the shooting-stars that are often seen darting through the air at evening. In size they varied from that of the planet Venus, which was then ten or fifteen degrees above the horizon, to a mere luminous point; and they invariably left behind them a luminous track, visible for several seconds, according to their magnitude. The largest emitted, during their progress, coruscations that appeared like flashes of lightning. It is impossible to give any definite idea of the number visible at any one moment: they varied at different times. One person compared them to large flakes of snow at the close of a snow storm—they were not, however, as numerous.

At times they fell in showers, and were much thicker in some directions than in others;—then again they would appear equally numerous in every part of the skies, and at no time, while it was dark, could the eye be fixed on any one point for a moment, without seeing a considerable number. They appeared to form high in the atmosphere, and dart towards the earth with about the same rapidity that a rocket shoots into the air, and finally become extinct within from fifty to one hundred feet of the earth, leaving, for a time, as before mentioned, a luminous trail behind them. Their direction was invariably from the south-east to the north-west, from high in the firmament toward the earth, forming a very acute angle with a line perpendicular to the horizon. The whole time they were evident was about three hours. The driver of the Pittsburgh stage informed me, that he left Youngstown at 3 o'clock, that they were not then to be seen, but that he first observed them when a mile or two north of that town, and that they were constantly visible until he arrived in this place. The distance between the two towns is about twelve miles.

I was called up at 5 o'clock, and watched them attentively until 6, when they were rendered invisible by the diffusion of daylight. Occasionally one could be seen so long as the planet Venus was discernible to the naked eye. Before the day dawned, the stars were unusually brilliant; the atmosphere was clear and unobscured by clouds, except a thick, dark body of haze, lay just above the horizon, several degrees below the quarter from which the meteors appeared to proceed. A slight breeze was blowing from the same point of the compass during the whole time.

Soon after I was awakened, my attention was attracted to a luminous spot in the north-east, which had a strong resemblance to a new moon, slightly obscured with clouds, when two or three hours high. It continued visible about fifteen or twenty minutes, and gradually disappeared. I am credibly informed that at 4 o'clock it was very bril-

liant, in the form of a pruning-hook, or an italic letter *S*, and appeared to be fifteen or twenty feet long.

The weather through most of the preceding day was mild, damp, and somewhat cloudy; at evening it became clear, and so cold that during the night the mud in the streets froze sufficiently hard to bear a person. At ten o'clock a hazy cloud lay in the north, and was bordered on its upper edge with the aurora borealis. A few minutes afterwards, on retiring to my chamber, I observed my clothes to be fully charged with electricity, which was, upon any considerable motion, emitted in brilliant sparks."

At Buffalo, New York, the following account was published:

"Very interesting atmospherical phenomena were visible, a little before daylight this morning, in this city. My attention was first called to them about half past four, A. M. The wind, which had been very heavy for many hours, had abated considerably, every vestige of clouds had disappeared, and the stars were shining through an unusually clear atmosphere. The air from within 20 feet of the earth to apparently the ordinary height of the clouds, (half a mile,) was filled with phosphoric particles, which were continually and successively becoming luminous. They all passed, while visible, with great velocity through the air, but in no uniform direction; some rose, some fell, others moved horizontally, and others, again, at every conceivable angle, to these several courses. Their colour was a vivid white, resembling that of the flame of steel wire burning in oxygen. Their sizes were various, but mostly about the apparent size of stars of the second magnitude. The distances of their luminous flights were various and not easily calculated. Many of them, in their passage, left a luminous line in the air, of their own colour, which was often several yards in length, and usually remained visible from one to three seconds. I have said there was no cloud: there was none, but the whole atmosphere was constantly, at very short intervals, illuminated by flashes of light, in no way differing from ordinary silent electrical explosions. The Aurora Borealis, during the whole time of my observations, which was about half an hour, was distinctly visible, though by no means so brilliant or so active as that meteor usually is, when visible here.

Upon the whole, the scene was by far the most sublime meteoric display I ever beheld; and I only regret that the unfavorable hour of its occurrence deprived me of an opportunity of observing the influence that such a singular electrical state of the atmosphere may be supposed to have exerted upon the magnetic needle."

At Connersville, Indiana, they were observed, and described in the following terms, by a writer in the Port-Folio:

"The evening referred to was cold and clear. Not a cloud was discoverable above the horizon. About 3 o'clock in the morning the atmosphere was literally filled and illuminated with meteors, resembling what are called falling-stars. They moved apparently from the zenith, to every point of the compass. In their descent they reflected a very brilliant light, which was nevertheless whiter than the light reflected by a common blaze of fire. The *bolides* (fire-balls) or particles, were of different sizes; some apparently of the size of the fixed stars, and others five or six times as large. Those of the largest size, on their descent, left behind them a luminous path, which was perceivable 5 or 6 seconds after they had ceased to exist. In the space of 30 minutes after their first appearance, the scene was truly grand and terrific. The atmosphere presented something like the same appearance as when globules of ice or hail, are falling in large quantities, when the sun is unclouded. But the contrast which was created by the darkness of night, made the scene imposing beyond the power of description. Accompanying these appearances was not the slightest noise. The stillness of night was not disturbed by the softest zephyr. The meteors continued to float, though gradually abating in quantity, until the rising sun closed the scene."

The editor of the Lexington Ky. Intelligencer, has given the following notice of this phenomenon:

"The whole firmament was filled by thousands if not millions of shooting and blazing meteors, traversing each other's track at all angles, horizontally, longitudinally, and in circles, and approaching the earth so nearly as to illuminate the streets, and to resemble an incessant shower of flaming comets. The appearance of the meteors varied in size, from the circumference of a man's head to that of a dollar, and after explosion, assumed every imaginable singularity of form. This natural display of fire-works continued from 2 until 5 o'clock in the morning. The sky was perfectly clear; the atmosphere damp, occasioned by the fall of rain on Monday, and the temperature was about 60 of Fahrenheit, where it had ranged for several days preceding."

Without multiplying the descriptions of this phenomenon, as seen in the valley of the Mississippi, we may state that, it was observed as far north as Detroit, south as New-Orleans, and west as St. Louis.

Of the appearance which it exhibited on the eastern side of the mountains, the following notices may suffice. At Augusta, in Georgia, it was described in these words:

"For several hours last night the heavens presented an appearance seldom if ever witnessed before. Hundreds and thousands of mete-

ors, resembling those occasionally seen in our cloudless nights, and of different degrees of brilliancy, were seen in all directions, darting through the sky. Some appeared no larger than a small spark, and to the eye seemed to move but a short distance; others were exceedingly brilliant, and pursued their burning way over one fourth or one third part of the visible expanse. A few shed abroad a sudden gleam as bright as lightning in a dark night, or equal, perhaps, to the light of the full-orbed moon, and left behind them a luminous pathway, which would continue twenty or thirty seconds. The attention of the writer of this notice was directed to the strange phenomenon a few minutes after 5 o'clock this morning, (or just at the break of day,) though it was seen by others in our town as early perhaps as 2 or 3 o'clock. By examining the meteors from different apartments of my house, I soon perceived that they all moved off in diverging directions, like the rays of a lamp, or the radii of a circle. This induced me to take my position in the open street, where I could survey the wonder more accurately. I discovered that all parts of the heavens were ornamented in rapid succession by these darting gems. Multitudes might occasionally be seen at the same instant. They commenced their career at all points of elevation above the horizon—and it was easy to perceive that, in all cases, the lines of their direction, if continued upward, would have met at the zenith. Indeed, many of these blazing travellers commenced their course near this focus, and hurried off to every point of the compass. Of the hundreds that I noticed, not one crossed the focus, not one intersected the path of a fellow-traveller, or of any that had gone before. The radiating appearance of the meteors was probably an optical illusion, as bodies falling from an immense height seem to recede from us as they approach the earth. The whole scene was indescribably beautiful; to some, perhaps awful, because so new and unexpected. Many in our city were at first much alarmed: it seemed that the stars of heaven were falling from their places.

The interesting scene lingered upon our eyes until the brighter glories of the morning shrouded it from our view. A few of the brightest meteors, however, were seen maintaining their contest with the morn, till as late as ten or fifteen minutes past 6. Here is work for philosophers. We cannot suppose that this singular phenomenon affords any evidence that the common laws of nature have been transgressed; but nature has never before appeared before our eyes in such garments, and perhaps seldom to the eyes of others. Such scenes will be regarded by all pious minds as furnishing occasions for holy wonder and devout adoration."

The Charleston S. C. Courier contains the annexed notice:

"The atmosphere in and about the city, was, on Tuesday night last, illuminated with a brilliant and extraordinary meteoric display. It consisted of myriads of falling or shooting-stars, some of a very large size, darting in an oblique direction towards the earth from every part of the heavens, and occasionally exploding like rockets. The

luminous appearance commenced about midnight, were most brilliant between 3 and 4 o'clock A. M., being assimilated by those who witnessed them to a fiery rain, or hail, and continued until near sunrise. We understand that a very large meteor exploded immediately over the City Hall. A sudden change of temperature, from hot to cold, which took place during the night, was probably closely connected with the origin of the phenomenon. We have been informed by Capt. Jackson, of the Revenue Cutter Jackson, who was at sea that night, at the distance of 9 miles from land, that the heavens were illuminated with the meteors during nearly the whole night, as far as the eye could reach, in every direction, presenting a spectacle of uncommon magnificence and sublimity, attended with frequent explosions resembling the discharge of small arms. We learn also that a meteor of extraordinary size was observed at sea to course the heavens for a great length of time, and then explode with the noise of a cannon."

Mr. F. G. Smith made the following observations on this phenomenon, at Lynchburg, Va.:

"On this morning (Nov. 13) between 2 o'clock and daybreak, we were presented with a most beautiful display of electrical excitement in the upper regions of the atmosphere, probably not excelled in interest by the similar meteoric phenomenon of Nov. 1802.

At 10 o'clock last night, I was struck with the uncommon transparency of the atmosphere and brilliancy of the stars. Soon after having my attention thus called to the peculiar state of the air, I felt a slight repetition of the tremulous motion of the earth, which has repeatedly been observed in this vicinity of late.

The shooting-stars, of which we had so impressive an exhibition this morning, made their first appearance in our hemisphere between 2 and 3 o'clock, but I did not notice them until about 5 o'clock. From the vast number and brightness of the meteors, the sight was, at that time, indescribably beautiful. Their general course was from the south-east to the north-west, the most of them appearing to the south-west of our zenith. They first came into view 20 or 30 degrees to the east of our celestial meridian, and extended their flight 40 or 60 degrees to the west of it. Their general motion was probably horizontal, although, from the position of the observer, they seemed to fall. Their path was marked by a train of light which was most brilliant near the point of their disappearance, continuing from 3 to 7 or 8 seconds, and sprinkling the heavens with long bright dashes of light, resembling in their form the marks made on the window by the first drops of a shower driven against the glass. The colour of the light was generally a pure white, but sometimes tinged with a reddish hue; and so great was the number and frequency of the meteors, as to illuminate the night sensibly, though slightly. The average flight of each ball was over an arc of about 50 degrees. The phenomenon was most brilliant to the south and west of Lynchburg, at an elevation

of from 30 to 69 degrees. The meteors vanished from sight without a visible or audible explosion, and for the most part without scintillations.

No appearance of the Aurora Borealis was observed, nor the slightest vapor of any kind. The air continued, as on the evening before, entirely pellucid.

At half past 6 o'clock the thermometer stood at 51 degrees, Fahrenheit; the barometer at 29 inches and four tenths, and the hydrometer at about 28 degrees. No change was noticeable in the magnetic dip, variation or intensity. Gold-beat electrometers were excited by a touch; Bennet's placed on the prime conductor, with the cushion insulated, rose on a slight motion of the machine. The pendulum of D. Luc's *dry pile* was accelerated."

The following is one of the accounts of this phenomenon as seen at the city of Washington:

"This morning, about half past four o'clock, our attention was arrested by something which appeared like what is called a falling-star; pretty soon another, and another appeared, so as to produce the impression that they might be bright sparks from a neighboring chimney. Their number and magnitude increased gradually, till, upon going out into the open air, they presented one of the most extraordinary and sublime spectacles which we have ever witnessed. They appeared to shoot, generally, from a point a little south-east of the zenith, diverging, at various angles, in all directions, keeping up a continual shower—though they appeared also to move by fits, with intervals about such as usually occur between the flashes of a sheet of lightning; some of them being so brilliant as to cause a general illumination of considerable brightness. Many of them left their traces in the air, which hung like swords of fire above the earth, for a minute or more. Ten or fifteen of these aerial weapons were often glancing at once. Some of them became crooked and irregular, before they disappeared. The air was remarkably clear and pure, and the stars shone with unusual brilliancy. This splendid exhibition, after attaining its height of grandeur, gradually died away, with the increase of twilight, till it either ceased or became invisible.

The directions of the shooting fire may be supposed to have been generally parallel; and, in that case, they were at a very small angle from the south-east. By the laws of perspective, their starting distance from the earth must have been equal to their distance when they disappeared, as their last apparent distance from the zenith line was to their first apparant distance from the line. Many of them increased their apparent distance from the zenith line probably in a ten-fold degree. Supposing that their last distance from the earth was five miles, their first distance must have been five times ten, or fifty miles. These measures are, of course, only relative."

A Baltimore observer, Mr. Kenny, gives the subjoined statement:

"My attention was arrested at about 4 o'clock this morning, by an unusual number of meteors which I supposed to be flying horizontally in all directions from one centre which appeared to be directly over the spot where I then stood; but on moving to a distance of about one and a half miles, I found the centre appeared still to be over me, and those meteors which appeared there left a much shorter train than those which appeared in any direction around me, from which I concluded that their course was perpendicular. Their number increased from four until half past five o'clock, when it seemed to rain fire, and while I stood at the corner of Charles and Fayette streets, one very bright trail appeared to me directly over Charles street. At first it was straight, the two ends then curling towards the west, till they formed a neat figure of three, after which the ends uncurled, turning towards the east till they came together and formed a straight line which then spread into the appearance of a light cloud, and disappearod after remaining visible at least ten minutes."

The same gentleman has made another communication on this subject, a part of which we shall likewise extract:

"When I first discovered them, it occurred to me that the atmosphere in the region where they originated, must be very much agitated; to ascertain that fact, and also the nature of the materials of which they were composed, I was led to devote my attention from four till seven o'clock, during which time I traversed some of the streets of Baltimore from north-west to south-east, without being able to come within reach of one of them. Although some few of them took a horizontal direction, yet the great majority of them appeared to descend directly towards the earth, but not one of them reached it within my view. Their commencement was generally very small, but they increased as they proceeded for a time, and then decreased in about the same proportion as they increased, leaving a light blaze, narrow at each end and wide in the middle. Some, after appearing to be nearly exhausted, would rekindle and proceed a second time, and some few a third time, leaving behind them as many links or trails, wide in the middle and narrow at each end, only connected together by a fine thread. Some of those trails would bend into various forms, and some few of the more prominent ones, after they were lighted up and had proceeded some distance, would explode and fly in all directions. The morning being clear, and the stars bright, furnished an opportunity to discover that the atmosphere was a perfect calm, as not one of those lights or trails after its own strength was exhausted, was wafted by the wind, but remained in the same spot where it was created till it became extinct. Yet many very brilliant ones were rapid in their motion, and left no trail behind them, but be-

came extinct in an instant. Some of our city watchmen discovered them about two o'clock, from which time their number increased till about half past five o'clock, after which there was a gradual decrease in number until the light of the sun obscured them."

Several New York accounts of these meteors have been published. We shall extract but part of two of them, from the Commercial Advertiser:

"Yesterday's change of weather, pencilled, near sunset upon the western skies, the brilliant hues of a summer's eve. As the curtains of darkness were spread around, the broad belt of the heavens visible in our hemisphere, became studded with the bright gems of night. A strong piercing wind cleared the atmosphere of every offensive vapor, and braced the nerves, at the same time that it gave effulgence to the bright surrounding scene. Somewhat before twelve o'clock, the meteors so often seen on summer evenings, and commonly called shooting-stars, were observed to fall with unusual frequency and splendor. They continued from that hour to flash athwart the skies, more and more, until they were eclipsed by the glories of the rising sun this morning. From four to six o'clock, they were most numerous and refulgent. Within the scope that the eye could contain, more than twenty could be seen at a time, shooting (save upward) in every direction. Not a cloud obscured the broad expanse, and millions of meteors spread their way across it, on every point of the compass.—Were it possible to enumerate them, in the swiftness of their arrowy haste, we might venture to say, that for the two hours intervening between four and six, more than a thousand per minute might have been counted. Their coruscations were bright, gleamy and incessant, and they fell thick as the flakes in the early snows of December. In one instance we distinctly heard the explosion of a meteor, that shot across the north-west, leaving a broad and luminous track; and witnessed another which left a path of light that was clearly discernible for more than ten minutes after the ball, if such it be, had exploded. Its length was gradually shortened—widening in the centre, and apparently consisted of separate and distinct globules of light, drawing around a common centre, glimmering, less and less vividly, until they finally faded in the distance."

* * * * *

"The meteoric shower of the 13th inst, was a rare phenomenon.

At half past four o'clock, A. M., I first observed it, and continued to notice it until its termination, at 6 o'clock A. M.

From a point in the heavens, about fifteen degrees south-easterly from our zeni h, the meteors darted to the horizon in every point of the compass. Their paths were described in curved lines, similar to those of the parallels of longitude on an artificial globe.

They were generally short in their course, resembling much an interrupted line, thus ——. ———. ————————. They ceased to appear when within about ten degrees of the horizon.

I did not see a single meteor pass the meteoric pole which I have described—nor one pass in a horizontal direction.

Several of them afforded as much light as faint lightning. One in the north east was heard to explode with a sound like that of the rush of a distant sky rocket. The time from explosion to the hearing was about twenty seconds—which gives a distance of about five miles.—It left a serpentine cloud of a bright glowing color, which remained visible for about fifteen or twenty minutes.

Millions of these meteors must have been darted in this shower."

The last account we shall extract, is that of Professor Olmstead, of Yale College:

"About daybreak this morning, our sky presented a remarkable exhibition of fire-balls, commonly called shooting-stars. The attention of the writer was first called to the phenomenon about half-past five o'clock, from which time until sunrise, the appearance of these meteors was striking and splendid, beyond any thing of the kind he ever witnessed or heard of.

To form some idea of the phenomenon, the reader may imagine a constant succession of fire-balls, resembling sky rockets, radiating in all directions from a point in the heavens near the zenith, and following the arch of the sky towards the horizon. They proceeded to various distances from the radiating point, leaving after them a vivid streak of light, and usually exploding before they disappeared. The balls were of various sizes, and degrees of splendor; some were mere points, but others were larger and brighter than Jupiter or Venus; and one seen by a credible witness, before the writer was called, was judged to be nearly as large as the moon. The flashes of light, though less intense than lightning, were so bright as to awaken people in their beds. One ball that shot off in a north-west direction, and exploded near the star Capella, left, just behind the place of explosion, a phosphorescent train of peculiar beauty. This line was at first nearly straight, but it shortly began to contract in length, and dilate in breadth, and assume the figure of a serpent folding itself up, until it appeared like a small luminous cloud of vapor. This cloud was borne eastward by the wind, opposite to the direction in which the meteor had proceeded, remaining in sight several minutes. The light was usually white, but was occasionally prismatic, with a predominance of blue.

A little before six o'clock, it appeared to the company that the point of radiation was moving eastward from the zenith, when it occurred to the writer to mark its place, accurately, among the fixed stars.

The point was then seen to be in the constellation Leo, within the bend of the *sickle*, a little to the westward of Gamma Leonis, and not

far from Regulus. During the hour following, the radiant point remained stationary in the same part of Leo. although the constellation in the mean time, by the diurnal revolution, moved westward to the meridian 15 degrees. By referring to a celestial globe, it will be seen, that this point has a right ascension of 150 degrees, and a declination of about 20 degrees. Consequently it was 20 degrees 18 minutes south of our zenith.

The weather had sustained a recent change. On the evening of the 11th, a very copious southerly rain fell, and on the 12th, a high westerly wind prevailed, by gusts. Last evening the sky was very serene; a few falling stars were observed, but not so numerous as to excite particular attention."

These notices will be sufficient to indicate the varieties of aspect which this great meteoric phenomenon put on, in different parts of our country; over the whole of which it appears to have been observed. To what distance it was seen west of Missouri, south of New Orleans, north of Canada, or to the east, over the Atlantic Ocean, we are as yet unable to say; but the commander of the ship Phœnix, reports it to have been observed by him and his crew, in long. 63 deg. 22 min. W., and 32 deg. 24 min. north: that is, about 12 deg. east of Charleston.

Several observers in this city, and elsewhere, had the impression, that some of these meteors actually fell to the earth; but none of them heard the sound of any thing solid striking upon the surface of the ground, nor have any fragments been found; so that, on the whole, we may conclude they were not aerolites, although those meteors, when appearing at night, have generally been luminous. It can scarcely, we think, be doubted, but that the stony meteors which occasionally fall, are distinct from the ordinary shooting-stars, to which those of the 13th of November would seem to have been analogous.

Several observers heard a faint and distant sound in the air, which was in some cases dull, in others, rushing or hissing; but the greater number of explosions, as they have been incorrectly called, were only dispersions, and attended with no noise whatever. Nor does there appear to have been any odour observed, even by those nearest the spot where the meteors were supposed to fall. To us it is not im-

probable, that none of them approached the surface of the earth, or even came into the lower regions of the atmosphere. The area of country over which they were observed, is already known to be so extensive, as to indicate, either that they were at a very great height, or that they occupied a vast horizontal space in the heavens.

For half a century, the nature of the shooting or falling-star, has been a subject of speculation with the scientific. The perpetual recurrence of that solitary meteor, every night, over the whole surface of the globe, would seem to show, that it does not depend on an occasional cause reproduced at distant periods; but a power constantly present in the upper regions, where that phenomenon is generated. Some philosophers have satisfied themselves with the opinion, that this cause is electricity; but until it can be shown how the electric fluid exerts itself to produce this appearance, the opinion can be regarded as nothing more than a hypothesis. Others have assumed the combustion of phosphoretted hydrogen, accumulated far over our heads, and taking fire spontaneously, on descending into denser strata of air; but whence was this gas derived, and what would cause it to fall through the atmosphere with the velocity which these meteors usually exhibit? On the whole, it must be admitted, that many facts are still wanting; and that we are nearly ignorant of the cause, not only of the late shower of falling-stars, but of the common and solitary meteor bearing that name.

As physicians, it is important to know, whether the late shower has been followed by any new disease, or any modification of the old. In reference to this city, nothing of the kind has occurred. We never had a healthier month than November, and December has presented nothing uncommon, either in the variety or force of our diseases. A similar remark would not be exactly applicable to our weather, for October and November were unusually cold; December, however, has had a compensating mildness, and these anticipations of winter, are by no means unprecedented. In respect to clouds, rain, winds, &c., the autumn and winter, thus far, have not been in any wise remarkable.

The great exhibition of shooting-stars, of which we have here embodied some notices, is not the first that has been presented to the admiration of the new world. On the morning of the 12th of November, 1799, just 34 years previously, there occurred a similar phenomenon. The late Professor Ellicott, of the Military Academy, employed by the government to run the boundary line between the United States and the Spanish possessions, when on board a vessel off the coast of Florida, observed a similar phenomenon, and as his name is frequently mentioned at the present time, we shall quote from his journal, now an exceedingly rare book, the whole of his observations:

November 12, 1799.—"About two o'clock in the morning, I was called up to see the shooting of the stars; (as it is vulgarly termed). The phenomenon was grand and awful; the heavens appeared as if illuminated with sky-rockets, flying in an infinity of directions, and I was in constant expectation of some of them falling on the vessel.—They continued until put out by the light of the sun, after daybreak. This phenomenon extended over a large portion of the West India Islands, and was observed as far north as St. Mary's, where it appeared as brilliant as with us. During this singular appearance, the wind shifted from the south to the north, and the thermometer, which had been at 86 degrees for four days past, fell to 56 degrees."

The same phenomenon was observed by Humboldt and Bonpland, when on their travels in South America, and we shall extract from the abridgment of their narrative, the following notice of it:

"Thousands of fireballs and falling-stars succeeded each other during four hours, having a direction from north to south, and filling a space of the sky extending from the true east 30 degrees on either side. They rose above the horizon at E. N. E. and at E., described arcs of various sizes, and fell towards S., some attaining a height of 40 degrees, and all exceeding 25 or 30 degrees. No trace of clouds was to be seen, and a very slight easterly wind blew in the lower regions of the atmosphere. All the meteors left luminous traces from five to ten degrees in length, the phosphorescence of which lasted seven or eight seconds. The fireballs seemed to explode, but the largest disappeared without scintillation; and many of the falling stars had a very distinct nucleus, as large as the disk of Jupiter, from which sparks were emitted. The light occasioned by them was white,—an effect which must be attributed to the absence of vapors; stars of the first magnitude having, within the tropics, a much paler hue at their rising than in Europe.

As the inhabitants of Cumana leave their houses before four, to attend the first morning mass, most of them were witnesses of this phe-

nomenon, which gradually ceased soon after, although some were still perceived a quarter of an hour before sunrise.

The day of the 12th November was exceedingly hot, and in the evening the reddish vapor reappeared in the horizon, and rose to the height of 140 degrees. This was the last time it was seen that year.

The researches of M. Chladni having directed the attention of the scientific world to fireballs and falling-stars at the period of Humboldt's departure from home, he did not fail to inquire, during his journey from Caraccas to the Rio Negro, whether the meteors of the 12th November had been seen. He found that they had been observed by various individuals in places very remote from each other; and on returning to Europe was astonished to find that they had been seen there also. The following is a brief account of the facts relating to these phenomena:—1st, The luminous meteors were seen in the E. and E. N. E. at 40 degrees of elevation, from 2 to 6 A. M., at Cumana, in lat. 10 deg. 27 min. 52 sec., long. 66 deg. 30 min.; at Porto Cabello, in lat. 10 deg. 6 min. 52 sec., long. 67 deg. 5 m.; and on the frontiers of Brazil, near the equator, in long. 70 deg. west.—2dly, The Count de Marbois observed them in French Guiana, lat. 40 deg. 56 min., long. 54 deg. 35 minutes.—3dly, Mr. Ellicot, astronomer to the United States, being in the Gulf of Florida on the 12th November, saw an immense number of meteors, some of which appeared to fall perpendicularly; and the same phenomenon was perceived on the American continent as far as lat. 30 deg. 42 minutes.—4thly, in Labrador, in lat. 56 deg. 55 min. and lat. 58 deg. 4 min.; in Greenland, in latitudes 61 deg. 5 min. and 64 deg. 14 min., the natives were frightened by the vast quantity of fireballs that fell during twilight, some of them of great size.—5thly, In Germany, Mr. Zeissing vicar of Itterstadt near Weimar, in lat. 50. deg. 59 min., long. 9 deg. 1 min. E., observed, between 6 and 7 in the morning of the 12th November, some falling-stars having a very white light. Soon after reddish streaks appeared in the S. and S. W.; and at dawn the south-western part of the sky was from time to time illuminated by white lightning running in serpentine lines along the horizon.

Calculating from these facts, it is manifest that the height of the meteors was at least 1419 miles; and as near Weimar they were seen in the S. and S. W., while at Cumana they were observed in the E. and N. E., we must conclude that they fell into the sea between Africa and South America, to the West of the Cape Verd Islands.

Without entering into the learned discussion which Humboldt submits to his readers, respecting the nature of these luminous bodies, we shall merely observe, that he found falling-stars more frequent in the equinoctial regions than in the temperate zone, and also that they occurred oftener over continents and near certain coasts than on the ocean. He states, that on the platform of the Andes, there was observed, upwards of forty years ago, a phenomenon similar to that related above as having occurred at Cumana. From the city of Quito an immense number of meteors was seen rising over the volcano of Cayambo, insomuch that the whole mountain was thought to be on fire. They continued more than an hour, and a religious procession

was about to be commenced, when the true nature of the luminous appearance was discovered."

It would appear from the following republication, that about four years after the event just narrated, it was reproduced, over one spot if not more:

From the Richmond (Va.) Gazette of April 3, 1803.

SHOOTING-STARS.

This electrical phenomenon was observed on Wednesday morning last, at Richmond and its vicinity, in a manner that alarmed many, and astonished every person who beheld it. From oneu ntil three in the morning, those starry meteors seemed to fall from every point in the heavens, in such numbers as to resemble a shower of sky-rockets.—The inhabitants happened at the same hour to be called from their houses by the fire bell, which was rung on account of a fire that broke out in one of the rooms of the armory, but which was speedily extinguished. Every one, therefore, had an opportunity of witnessing a scene of nature, which never before was displayed in this part of the globe, and which, probably, will never appear again.

Several of those shooting meteors were accompanied with a train of fire that illuminated the sky for a considerable distance. One, in particular, appeared to fall from the zenith, of the apparent size of a ball eighteen inches diameter, that lighted for several seconds the whole hemisphere. During the continuance of this remarkable phenomenon, a hissing noise in the air was plainly heard, and several reports, resembling the discharge of a pistol. Had the city bell not been ringing, these reports would probably have seemed much louder. The sky was remarkably clear and serene, and the visible fixed stars numerous the whole night. We are anxious to know at what distance from Richmond this phenomenon has extended. It is hoped that persons who have remarked it in other places, will not neglect to inform the public of the particulars; as such information may add, in a great degree, to the knowledge of Meteorology.

Since writing the above, we have been informed, that several of the largest of these shooting meteors were observed to descend almost to the ground before they exploded. Indeed, many of those which we saw, appeared to approach within a few yards of the house tops, and then suddenly to vanish. Some persons, we are told, were so alarmed, that they imagined the fire in the armory was occasioned by one of these meteors, and in place of repairing to extinguish the earthly flames, they busied themselves in contriving to protect the roofs of their houses from the fire of heaven.

This circumstance of the shooting-stars descending within a short distance of the ground, is, however, a fact highly important to be known; as it has been generally supposed, that meteors only proceed in a horizontal direction, and never fly perpendicularly upwards.—Those which we particularly remarked, appeared to descend in an angle of sixty degrees with the horizon; but as the smaller ones were so numerous, and crossed each other in different directions, it was only possible to ascertain with any precision, the paths of the largest and most brilliant."

Reviews and Bibliographical Notices.

Art. VIII. Cyclopædia of Practical Medicine and Surgery.

The Cyclopædia of Practical Medicine and Surgery, a Digest of Medical Literature. Edited by Isaac Hays, M. D. Part I. Carey, Lea & Blanchard, Philadelphia, 1833.

The great *Dictionnaire des Sciences Medecales*, in 60 volumes, by the Profession in France, seems likely to be followed by many works of a similar kind, in those countries which look to that for examples. Among these are Great Britain and the United States. In the former, two cotemporary works, of more limited extent however, than that of the French, are now in the course of publication: in the latter, the work, of which the title is placed at the head of this article, is on the same plan, and may be regarded as the first attempt of the kind.

Its chieftain, Dr. Hays, is already well known, as the author of a variety of original papers, as a translator, annotator, and especially a contributor to our valuable cotemporary, the American Journal of the Medical Sciences. We have no doubt that Dr. Hays possesses many fine qualifications for the arduous and responsible office, to which he has been called. Among the names of those who are engaged as collaborators, we notice professors of no less than five medical schools, and many others who are distinguished as private lecturers or writers. This promises well. The editor informs us that—

"In the preparation of this work, free use will be made of the *Dictionnaire de Medecine et de Chirurgie Pratiques*, the *Dictionnaire de Medecine*, the *Cyclopædia of Practical Medicine*, *Copland's Dictionary of Practical Medicine*, and of the *Encyclopadisches Worterbuch der medicinischen Wissenchaften*, all now in the course of publication; and besides embracing whatever is valuable in them, it will contain a very large amount of new matter, principally relative to *American* medical practice and surgery."

On reading this candid acknowledgment, the pleasant emotions raised in us by the sight of the title-page, were somewhat abated. Our first impressions were, that an *American* Dictionary was commenced, and in its execution, would, from the names of those concerned in it, do honor to our medical literature.

We are, now, not without misgivings, that it may exhibit more naturalization than cultivation, of the medical sciences. This application of the American brand to European articles, has long been practised among us and that too, in many instances, by gentlemen whose talents fitted them for a much higher vocation. We have frequently felt disposed, to enter our humble *caveat* against this appropriation of that time and intellectual energies of our eminent teachers, and other talented physicians, which might be so much more profitably employed, in the production of original works, or at least of original compilations. We have yet to learn the advantage to the profession, of the dedications, introductions, perorations, or notes—marginal and supplementary, which envelope, like the swaddling clothes of the young infant, so many Scotch and English works, when they have their second birth on this side of the great waters; and are equally unable to comprehend or sympathise in the ambition, that prompts our distinguished physicians, to aspire to this sort of *accouchcuring*. We must, however, do our respected brethren of the present day, the justice to admit, that they are not the beginners of this custom. It commenced with the first republication of European books in this country. But can any sufficient reason be given for its continuance? In *most* cases, it certainly would be quite as well, for our publishers to reprint English, Scotch and Irish works, without having them edited. The very fact of our becoming editors and annotators, suggests the *idea* of inferiority; and if this is really the case, we are not likely to augment, in any decided manner, the value of the works upon which we direct our editorial labors, while they impress a stamp of unquestionable, if not deep degradation on our professional character.

Did we limit ourselves to the humble ambition of placing

our names *beneath* those of the authors, through whose works we scatter notes, (which too often are only extracts from other books,) no objections could be raised to the practice, but that the indulgence of a harmless vanity, in certain individuals, has tended to lower the dignity of a profession, in which they enjoy a high relative rank; but the matter does not stop here. It has been, and still is, one of our employments, to turn European into American books. Nothing is easier to perform. A new title-page, a new preface, and a breaking up of the succession of chapters, by which an artificial is substituted for the natural method of the author, are the only essentials. The introduction of an occasional section or paragraph of original composition, will more fully establish the claim of the second author, to the honors which exclusively belong to the first. It is not necessary that we should designate the eminent men, who have thus spent their time in Americanizing foreign books, and appeared before the public as the authors of large octavos, which were manufactured elsewhere. Their names and their works must occur to every intelligent reader. These piracies bring discredit on the character of the profession in the United States, and it should be regarded as a duty of our periodical press, to expose them to the world.

The Cyclopædia of Practical Medicine and Surgery, upon which our attention is now directed, is intended, we presume, to be put forth as an American work; but we fear that no inconsiderable portion of it, will be a reprint of the European dictionaries enumerated in the extract we have given. These portions, it is true, may not be the least valuable part, for the physicians of Europe have more industry, and the means of wider and deeper research, than those of the United States; but still it would be agreeable to know, in reading an article, whether it was native or exotic; and we cannot, in fact, perceive any good reason why we should not reprint European Dictionaries of Medical Science, *verbatim*, until we have a profession sufficiently mature, to bring forth an *original* cyclopædia.

Situated, as we are, in the *Back woods*, we have not had the

advantage of seeing the cyclopædias, which are to supply most of the *materiel* for our first dictionary of Medicine and Surgery; and are not able, therefore, to inform our readers, to what extent its contributors have wielded the scissors, instead of the quill. Among them, however, we recognise many, for whose talents and learning we cherish the highest respect; and whose labors, if directed to the production of new articles, would confer honor on the American name. It will be for them to set a good example; to aim, as much as possible, at original compositions, and indicate as borrowed, all those which are extracted from the cyclopædias, which they consult. No other course can be compatible with their character, and no other should meet the approbation of the American profession.

In reference to the first part of the work now before us, we do not mean to insinuate that this is not done; for we observe frequent references to the dictionaries and cyclopædias of Europe; but it is not always possible to find out whether the American writers have borrowed facts only, or whole pages of current composition, from those works; and, still, every intelligent and inquisitive reader, would like to know, whether that which he is studying, is foreign or domestic. He cannot divest himself of a desire to give praise or blame to him, who deserves it.

The first number consists of 108 pages, nearly four-fifths of which are devoted to the word *Abdomen*, and most of the remainder to *Abortion* and *Abscess*, the last of which is unfinished. The first article is the joint product of the editor, Dr. Hays, Dr. Reynell Coates, and Professor Geddings of Baltimore. As it presents, we may presume, a practical illustration of the plan of the work, we shall enumerate its divisions, that such of our readers, as think of subscribing, may judge for themselves.

ANATOMY OF THE ABDOMEN:—*parietes, structure of the walls, organs contained within the cavity, modifications arising from age;* —SURGICAL ANATOMY OF THE ABDOMEN;—ABNORMAL ANATOMY;—*Deviations depending on defective formative energy, depending*

upon the opposite condition, derangement in the situation and relations of the organs.

PHYSIOLOGY OF THE ABDOMEN;—SYMPTOMATOLOGY OF THE ABDOMEN; *temperature, form and size, tension and hardness, morbid sensations.*

PATHOLOGY OF THE ABDOMEN;—WOUNDS; *punctured, incised, contused, lacerated, gunshot;*—CONTUSIONS OF THE ABDOMEN;—RUPTURES FROM INTERNAL CAUSES;—EFFUSIONS; *of blood, of bile, of urine, of the contents of the alimentary tube, of pus;*—ABNORMAL ADHESIONS OF THE VISCERA;—FISTULÆ OF THE ABDOMEN;—FOREIGN BODIES IN THE ABDOMINAL CAVITY;—LOOSE BODIES IN THE SAME;—ABDOMINAL TUMOURS OF VARIOUS KINDS; *scirrhus, fatty;*—ENCYSTED DROPSIES;—PHLEGMONS AND ABSCESSES;—ABDOMINAL PULSATIONS.

From this analysis, the reader will perceive, that the article has a monographic character, and must, of necessity, embrace a variety of important matters. Most of them are treated with ability and copiousness; and should the future topics be handled with equal skill and learning, the work cannot fail to be highly instructive, especially to those who reside in places remote from the great libraries, from which the materials of this comprehensive work have been drawn. The division adopted in this article, is one well calculated to present a great variety of facts; and we were particularly pleased to find the clinical and the surgical anatomy of the abdomen thrown under distinct heads. This should be done for every part of the body.

As specimens of the manner in which the article is written, we shall make a few extracts, selecting chiefly those of a practical character; and, that our readers may form a judgment of the style of the three gentlemen, who have jointly composed it, we shall permit each one to be represented.

The following anatomical remarks on the normal and abnormal anatomy of the parts concerned in hernia, may serve as a specimen of the manner in which Professor Geddings has executed his portion of the task:

"The external and internal configuration of the posterior walls of the abdomen have been already described. It is divided into two

lateral portions, which are symmetrical, by the perpendicular prominence formed by the projecting bodies of the lumbar vertebra. On each side of this prominence is an elongated excavation which extends from the diaphragm to Poupart's ligament; and at the latter point the posterior and anterior walls unite with each other at an acute angle. Entering into the formation of the posterior wall, we have the skin and subjacent cellular tissue, the muscles which are attached to the posterior portion of the spine, the lumbar portion of the spinal column, with its connecting ligaments and intervertebral substance, the quadratus lumbarum, psoas magnus and parvus, and iliacus internus muscles, the fascia iliac, fascia propria, peritonæum, and numerous vessels and nerves. It will be unnecessary to describe all these parts individually, as they will be considered under the appropriate heads. We shall therefore confine our observations to those parts which are situated within the cavity, and which are placed in front and by the side of the osseous structures already adverted to.

The peritonæum and fascia propria, throughout the whole extent of this region, are merely connected to the parts which are situated beneath them, by means of cellular tissue, which is exceedingly loose in its arrangement. This explains the facility with which the former membrane is drawn downwards, when any one of the abdominal organs protrudes from the cavity. The manner in which this takes place has been already explained. It is also through the loose meshes of this cellular tissue that the matter of a *lumbar* or *psoas abscess* travels, to point at the groin, thus finding an easy route behind the peritonæum, from the point of its first development, to the situation at which it manifests itself beneath Poupart's ligament. The peritonæum, in this region, does not adhere in a uniform manner to the walls of the cavity which it lines, as it does to the anterior parietes of the abdomen, but is reflected over the surface of the different organs to furnish most of them with a covering, and maintain them in their situation.

When all the organs have been removed, the region under consideration presents an inclined plane, extending from the diaphragm to Poupart's ligament, and bounded externally by the crista of the ilium; internally by the prominence occasioned by the lumbar vertebræ, and by the brim of the pelvis. This inclined plane, by uniting at Poupart's ligament with a similar surface presented by the anterior wall of the abdomen, forms an arrangement which has been compared to the expanded portion of a funnel deficient on the side towards the pelvis, the neck of which descends behind Poupart's ligament, to form an opening, or canal, which we shall presently describe under the appellation of *crural canal* or *crural ring*.

Poupart's ligament, which, as has been stated, forms the inferior termination of these two inclined planes, as it passes from the spine of the ilium to the pubis, leaves between it and the horizontal portion of the bone in an irregular elongated opening, which is partly filled up by muscles, vessels, and nerves, and partly by an arrangement of fascia, which must now be described. This opening is somewhat narrower about its middle than at its two extremities, in consequence of

the pectinæal prominence of the bone, and may be compared to a figure of 8 placed horizontally. The depression situated on the outside of the prominence, is nearly filled up by the united portions of the psoas magnus and iliacus internus muscles; that on the inner side, by the crural artery and vein, and the anterior crural nerve. On the inner side of the vein, however, and between it and *Gimbernat's ligament*, there is a small annular, or rather elliptic space, which is less completely closed, and which is described under the appellation of the *crural ring*. The arrangement of these parts will be more particularly examined, after we have described the fascia which lines the posterior wall of the abdomen.

The whole extent of the iliac and lumbar regions of the abdomen are lined by a fascia, which is strong and almost aponeurotic below, but more feeble in its structure above. It was first described by Sir Astley Cooper under the appellation of *iliac fascia*, but should be considered as merely a continuation of the *fascia transversalis* already described, of which it constitutes a portion. It reposes upon the quadratus lumborum, iliacus internus, and psoas muscles, to which it is connected by loose cellular tissue. It is attached externally to the internal border of the crista of the ilium, and internally, where it reposes upon the psoas muscles, it forms a sheath for the iliac vessels, contracts an intimate adhesion with the brim of the pelvis, and descends into that cavity to constitute the pelvic fascia. (See *Pelvis.*) Inferiorly, the *iliac fascia* is arranged differently on the outer and the inner side of the *crural vessels*. On the outer side of those vessels, it passes downwards upon the anterior face of the psoas and iliac muscles, and on a level with Poupart's ligament divides into two layers, one of which is posterior and inferior, the other anterior and superior. The first continues to descend upon the face of those muscles, to become continuous with the profound, or *pectinæal* portion of the *fascia lata* of the thigh, while the second is reflected forwards, to attach itself with the whole extent of Poupart's ligament, comprised between the crural vessels and the anterior superior spinous process of the ilium, and then to become continuous with the *fascia transversalis*. In the angle formed by the separation of these two layers of fascia is lodged the *circumflex iliac artery*. (Manec, *Sur la Hernie Crurale*, p. 21, plate 2. Paris, 1826.) In consequence of this arrangement, that portion of the space behind Poupart's ligament, and between the crural vessels and the spine of the ilium, is so effectually closed up as to render a hernial protrusion in that situation impossible, or at least exceedingly rare.

At the extreme inner part of this region, the *fascia iliaca* adheres to the pubis and the superior surface of *Gimbernat's ligament*. On the outer side of this ligament, and from that point to the external limit of the crural vessels, it adheres to the *horizontal ramus* of the *pubis*, and, fortified by the expanded tendon of the psoas minor muscle, descends behind the vessels, and becomes continuous with the *profound layer* of the *fascia lata* of the groin, as already stated in reference to the external portion. It therefore forms the posterior boundary of the *crural ring*, and the posterior portion of the *sheath of the vessels*,

while the anterior is formed by the *fascia transversalis* descending in a similar manner behind Poupart's ligament, and in front of the same vessels, to become continuous with the superficial portion of the fascia lata. This disposition of the two fascia furnishes the neck, or stem, of the funnel-like arrangement to which we have adverted above, and is instrumental in the development of two parts which are highly important in relation to the subject of *crural* or *femoral hernia;* the first, the *crural canal*, consisting of the sheath of the vessels, and the second the *crural ring*, comprising the space situated between the inner part of the *crural vein* and the external margin of *Gimbernat's ligament.* (Manec *Op. Cit.*) These two parts, generally confounded with each other, should be considered apart: but to enable us to form a correct understanding of their arrangement, it will be necessary to examine first the Fascia Lata of the groin.

This is a strong fibrous aponeurosis, which invests the whole of the muscles of the thigh, and connects itself above, on the one hand, with *Poupart's ligament*, and on the other, continues with the *fascia transversalis* and *fascia iliaca*, as just described. It does not belong to the abdomen, but its intimate connection with parts which we have been considering, renders it necessary to take some notice of it in this place.

In the upper portion of the groin, and about an inch below Poupart's ligament, the fascia lata seems to be perforated by a large rounded opening for the transmission of the internal *saphena vein*, where it is about to unite with the *femoral vein.* This appearance, however, results from the division of the fascia into an internal and an external portion, which separating from each other, the first to mount upwards behind the crural vessels, the second in front of them, give rise to an opening, the inferior boundary of which presents a thick well-defined concave border, looking upwards, through which the *saphena vein*, which is superficial, dips down to discharge itself into the *femoral vein*, which is situated beneath the fascia. That portion of the *fascia lata* which is situated on the outer side of the vein, sometimes denominated superficial, or iliac portion, mounts upwards to unite itself with the whole extent of *Poupart's ligament*, from the spine of the ilium to the pubis, and to become continuous with the *fascia transversalis*, which, as has been stated above, descends behind the ligament just mentioned, to connect itself with the fascia of the groin. Its internal border, however, instead of ascending in a perpendicular direction, takes a course upwards and inwards, in front of the crural vessels, and by describing a kind of semi-circular sweep as it ascends, its internal margin forms a *crescentic* or *falciform border*, the concavity of which is directed inwards and slightly downwards, while the extremity of this border ascends behind the extreme inner part of Poupart's ligament, to blend itself with the inferior face of *Gimbernat's ligament*, which it assists in forming. This arrangement was first noticed by Hey, and it constitutes a portion of what has since been sometimes described under the appellation of *Hey's ligament.* It was denominated, by Allan Burns, *the falciform process of the fascia lata.* It forms the anterior portion of the *sheath of the*

vessels or the *crural canal.* The *internal, pubic,* or *pectinæal portion* of the *fascia lata* from the internal portion of the *saphena vein,* mounts upwards in front of the pectinalis muscles, and behind the crural vessels, at the same time inclining outwards, that while it gets behind the vessels, it ascends upon the anterior face of the *psoas* and *iliac muscles.* Pursuing this course, it finally reaches the level of the *horizontal ramus* of the *pubis,* with which it adheres intimately behind the vessels and on a level with the posterior boundary of the crural ring, and finally becomes continuous with the inferior and posterior layer of the *iliac fascia,* as already described. It consequently forms the posterior portion of the *crural sheath,* or *canal.*

The crural canal is that portion of the sheath of the crural vessels comprised between the point at which they engage themselves behind Poupart's ligament and the lunated opening of the fascia lata, which is traversed by the saphena vein. This canal has been confounded by Sir Astley Cooper, Cloquet, and most writers on the subject, with the *crural ring,* from which, however, it is altogether distinct, as has been very correctly represented by Manec. The crural vessels and the anterior crural nerve, as they descend from the cavity of the abdomen into the groin, are placed in the following order: the nerve is on the outer side, the artery is situated next to it, and the vein is placed on the inner side of the artery. It has been already stated, that on the outer side of these parts, the direct continuity of the *fascia iliaca* with the *fascia transversalis* completely closes up the space between Poupart's ligament and the bone, so as to render it impossible for any protrusion to take place in that situation, at any point between the artery and the spine of the ilium. Where the vessels escape from the abdomen, however, the arrangement of the parts is different: the *fascia iliaca* descends behind them to continue with the profound layer of the *fascia lata,* while the *fascia transversalis* descends in front to continue with the superficial layer of the same *fascia* and its *falciform process.* These vessels, therefore, seem to be placed between these two layers of fascia in the same manner as though they were laid between two sheets of paper. If, however, the superficial layer be slightly elevated, by pinching it in the forceps, it will be observed that several small septa, or partitions, pass backwards, from the superficial to the deep-seated layer of the fascia lata, the most exterior of which constitutes the external boundary of the nerve, the second forming a partition between the nerve and the artery, the third separating the latter vessel from the vein, while the fourth, which is the strongest of all, passes from the edge of the falciform process backwards, bounding the vein internally, and separating it at the same time from the *crural ring,* which is on its inner side. This latter portion generally reposes in contact with a mass of lymphatic glands, the vessels of which, by traversing it, give it something of a *cribriform* appearance. It constitutes the internal boundary of the *crural canal,* the external limit of which is formed by the connexion which is established between the superficial and deep-seated portions of the fascia on the outer side of the vessels and nerves. The superior opening of this canal corresponds with the point at which

the vessels escape from the cavity of the abdomen, while the inferior is represented by the point at which the saphena vein perforates the fascia lata, to unite with the femoral vein. The canal, however, cannot be considered as terminating at this latter point by an open extremity, as described by Beclard and Cloquet, because the saphena vein is still contained within a sheath, which accompanies it throughout the whole extent of the thigh. The crural canal thus formed, may be considered as representing the stem, or neck, of the funnel-like arrangement above adverted to, while the expanded portion of the same is represented by the *fascia iliaca* and *fascia transversalis*, where they are spread out within the abdomen.

In consequence of the manner in which the sheath is fortified by the numerous perpendicular partitions which traverse it from before backwards, and their intimate adhesions with the vessels, it will be impossible for any protrusion to take place through it; at least such an accident, if it ever does take place, must be of very rare occurrence, though it has been conceived by Beclard and Cloquet, that an organ, escaping through this passage, might become strangulated at the point which they have denominated the *inferior opening of the crural canal.*

The *crural ring*, properly so called, is a small triangular, or rather oval opening, having its largest extremity directed outwards, situated between the crural vein and the external concave margin of *Gimbernat's ligament.* It is larger in the female than in the male, but its dimensions vary very materially even in individuals of the same sex. On an average, its transverse diameter, which is the largest, is from six to ten lines, though where the pelvis is very much developed, it may measure an inch. Internally, the *crural ring* is bounded by the sharp, crescentic border of *Gimbernat's ligament* already described; anteriorly, by *Poupart's ligament* and the tip of the *falciform process* of the *fascia lata*, which, where it is strongly developed, forms a kind of imperfect anterior wall; externally, by the *septum* which constitutes the interior boundary of the *crural canal;* and posteriorly, by the *crest* of the *pubis.* In some cases Gimbernat's ligament is less distinctly marked than usual, and in such instances the transverse diameter of the *crural ring* is always increased in the same ratio.

This opening, which constitutes the point at which the organs protrude in crural hernia, is generally partially filled up by one or more lymphatic glands, and more or less loose cellular tissue; but in addition to this, it is fortified by a kind of *fibro-membranous septum*, perforated by numerous minute orifices, which was described by Sir Astley Cooper under the appellation of *cribriform fascia*, and which Cloquet has denominated *crural septum.*

This septum, which is strong and resistant, is placed in nearly a horizontal direction, when the individual is erect, and completely closes up the crural ring, to the whole contour of which it is attached. Internally, it is intimately connected with the crescentic margin of Gimbernat's ligament, and externally, to the inner portion of the sheath of the crural vessels. Its superior face, which is directed towards the cavity of the abdomen, and which is lined by the peritonæ-

um, is slightly concave; the inferior, which is inclined downwards, is convex. Where it is strongly developed, it seems to be composed of transverse fibres, but in many cases it is altogether of a cellular structure. In all cases, it is perforated by numerous small apertures, which are traversed by the lymphatic vessels, and sometimes one or more of these small openings are occupied by a minute gland. (Cloquet, *Op. Cit.* p. 73.) When the finger is forced from the cavity of the abdomen downwards, into the crural ring, it meets with considerable resistance, occasioned by this septum; and in consequence of the manner in which it closes up the opening, it constitutes the principal obstacle to a hernial protrusion. It sometimes happens, nevertheless, that one of the small openings mentioned above becomes sufficiently dilated or ruptured to allow a portion of intestine or omentum to escape, or the septum itself is extended, and carried before the protruding organ, so as to allow the same accident to take place. (See *Hernia.*)

The most important vessel situated in the vicinity of the crural ring is the *obturator artery.* This vessel, which most usually comes off from the internal iliac, and passes from thence to the upper part of the thigh through the obturator foramen, not unfrequently departs from this arrangement, and takes its origin from the external iliac, or the crural, either separately or by a common trunk with the epigastric. This anomalous disposition was long since noticed by Haller and some of the older anatomists, and has, in modern times, been very attentively investigated, in consequence of the intimate relations of the vessel with the parts concerned in a crural hernia. Haller speaks of nine cases in which this anomalous distribution was observed. (*Icones, Anat. fasc.* 4. Nota 9.) Hesselbach met with three examples, in thirty-two bodies, in which the obturator artery was given off by the external iliac. (*Uebur den Ursprung und Verlauf der unteren Bauchdecken-Schlagader.* 1819. 1. *Abbild.*) Monro has represented the comparative frequency of the anomalous origin of the obturator artery as 1 in 20; (*Morbid Anatomy of the Stomach and Gullet*, p. 125. Edinburgh, 1830.) and this accords with the result of the experience of Velpeau. (*Anatomie Chirurgicale*, Tom. II. p. 159.) Burns observed it in 30 cases. Lawrence and Scarpa estimate the frequency of its occurrence at 1 in 10 or 12 bodies. Out of 250 subjects, one half males, the other half females, examined by Cloquet, he found the obturator artery arising from the internal iliac, on both sides, in 160, of which 87 were males and 73 females: from the epigastric, on both sides, in 56, of which 21 were males and 35 females: from the internal iliac, on one side, and the epigastric, on the other, in 28; males 15, and females 13: from the crural, in 6; males 2, females 4. (*Recherches Anat. sur les Hernies.* 4to. p. 72.) It will thus be seen, that these anomalies in the origin of the obturator artery are more frequent in the female than in the male; an observation which has also been made by Tiedemann. (*Tabulæ Arteriarum Corporis Humani.* Tab. XXX. p. 295. Carlsruhæ, 1822.) Breschet (*Memoire sur la Hernie Crurale.* Paris, 1819.) has estimated that the obtura-

tor takes its origin from the external iliac, the crural, or epigastric, in the ratio of 12 to 63; Manec, (*Recherches Anatomico-pathologiques sur la Hernie Crurale*, p. 27,) 1 in 6; and Meckel (*Manuel d'Anatomie*, Tom. II., p. 448) affirms, that if we take into account the cases in which the artery derives one branch from the internal iliac, and a second from some one of the vessels designated, the anomaly occurs almost as frequently as the natural arrangement, inasmuch as this disposition generally exists during the early months, and only becomes modified by one of these branches becoming obliterated. Consequently, that one which remains pervious will represent the obturator, whether it come from the internal or external iliac. The result of our own observations upon this point would lead us to adopt the conclusions of Cloquet, Breschet, and Manec, which are but slightly at variance with each other. Of course, we would not include the cases just adverted to, in which the vessel derives its origin from both sources.

All these anomalies are important, inasmuch as the relations of the obturator, when it takes its origin from the epigastric or the crural, are frequently so intimate with the anterior and internal portion of the protruded parts which are concerned in a crural hernia, as to expose it to the knife in operating for the relief of that disease. It has been observed, that when it comes off by a common trunk with the epigastric, and that common trunk is long; or where it arises from the crural, below Poupart's ligament, it generally twines round the internal portion of the neck of the hernial sac, and would of course be divided in dilating a stricture upwards and inwards, or directly inwards. But when the trunk of the epigastric is short, or the vessel comes off, high up, from the external iliac, it will always pass on the outer side and behind the hernial sac, and will consequently be out of the reach of the knife. This latter disposition of the artery, is more frequently observed than the former, but the cases in which the obturator artery passes in front, and on the inner side of the sac, are by no means confined to the female sex as represented by Hesselbach. Lawrence supposed that in forty cases in which the obturator artery takes its origin from the epigastric or the crural, it will not be found passing in front of the crural ring in more than one. Our own researches however, would lead us to the adoption of a different estimate, and to represent the anterior distribution of the vessel as occurring much more frequently than is here represented. Out of eight examples of the anomalous origin of the obturator contained in the museum of the University of Maryland, which we have just examined, the artery passes in front of the crural ring in three; behind, in four; and in one, it seems to pass directly across it in a transverse direction.

In addition to the vessels enumerated, the spermatic artery should also be mentioned, amongst those which are situated in the vicinity of the crural ring. It descends with the spermatic chord in an oblique direction along the course of the inguinal canal, and in the vicinity of the external abdominal ring, and is consequently situated immediately in front of the crural opening. In attempting, therefore,

to dilate the stricture in crural hernia, by cutting directly upwards this vessel might be divided, as happened to ARNAUD, HEY, SCARPA, and others.

The veins follow, for the most part, the course of the arteries, and are sometimes double. Occasionally, however, they depart from the natural order of their distribution, and assume new relations which it is important to note. When the obturator artery arises from the external iliac or the epigastric, it is always accompanied by its corresponding vein; but besides this, it frequently happens, even where that artery presents its natural arrangement, that there is an obturator vein opening directly into the external iliac vein, near the brim of the pelvis. This vessel, however, is always, under such circumstances, placed out of the reach of the knife, and is situated behind the hernial sac.

MANEC (*Op. Cit.* p. 29. Plate 2, fig. 3, 4.) has reported a singular anomaly of the venous system of this region. A vein was observed coming off from the lower part of the external iliac vein, from whence it ascended in a tortuous direction toward the umbilicus, where it escaped from the abdomen through an opening formed by a recession of the fibres of the linea alba, and formed a loop of three or four inches in length beneath the skin. It then re-entered the cavity by the same opening, and ascended upon the left side of the umbilical ligament to the transverse fissure of the liver, where it opened into the sinus of the portal vein. A case very similar has been observed by MENIERE, *Interne* of Hotel Dieu. *Archiv. Gen.* X. 381. In both these instances the situation of the anomalous vein was such, that if a crural hernia had taken place, the vessel would have occupied the internal boundary of the neck of the sac, and would of course have been divided in dilating the stricture inwards, as recommended by Gimbernat.

It may be proper in this place to advert to a pathological state of the superficial, or external epigastric vein of the abdomen, some examples of which have been observed within a few years. In a case observed by HOURMANN, the history of which is reported in the *Archives Generales*, this vein was found enormously dilated in consequence of an obliteration of the inferior vena cava. (*Dictionnaire de Medecine*, Tom. I., p. 109. 2d edition.) Under these circumstances, the blood which is prevented from returning by the cava, is carried by the superficial vein in question by means of the numerous anastomoses which it forms with the branches of the axillary vein; this collateral venous circulation, together with the azygos, compensating for the obliteration of the abdominal cava. VELPEAU has also reported a case of a similar kind; and BOYER mentions another, in which the vein was dilated to the size of a child's head."

The subjoined observations on *morbid sensations* in the abdomen, are from the pen of the Editor, Dr. Hays:

"Many ***morbid sensations*** are experienced in the abdomen, which are all confounded together under the single epithet pain; but as each

variety may have a peculiar signification, the symptomatologist should carefully distinguish them. Pain in the abdomen appears to occasion more anguish than in any other part of the body; it produces a remarkable alteration in the expression of the face, the countenance indicating not only suffering, but prostration and despair.

From their seat and peculiar characters, M DANCE (*Loc. Cit.*) indicates the following varieties of abdominal pain: 1st. peritonæal, 2d. gastric or cardiac, 3d. intestinal or colic, 4th. hepatic, 5th. nephritic, 6th. vesical, and 7th. uterine. *Peritonæal* pain is acute, severe, superficial, and aggravated by the slightest pressure. *Gastric* or *cardiac*, the principal seat of which is in the epigastrium, is attended, notwithstanding its numerous grades, with more anxiety, sadness, and even despair, than any other pain. The *intestinal* or *colic* are characterized by being cutting, not constant, and accompanied with a sensation in the intestines of the movement of gas or fecal matters; they are also felt in the various parts of the abdomen when they affect the small intestines, and in the course of the colon when they are seated in the large intestine; in the rectum when the pain is attended with a frequent and often ineffectual inclination to go to stool, as is observed in dysentery, it is termed tormina and tenesmus. *Hepatic* pain has a greater tendency than any other to be converted into a sensation of weight or heaviness, generally imperfectly described by the patient. *Nephritic* pain is principally seated in the renal region, but it often extends to the bladder, testicles, or groin, following the course of the ureters, and it is sometimes intensely severe, as when a calculus is in the ureter. *Vesical* pains extend over the hypogastric region and also to the perinæum, and are aggravated by the discharge of urine which frequently occasions a burning sensation. One of the peculiar characters of *uterine* pains is that they occasion, during and after parturition, the *cutting* and intermitting pains corresponding to the contractions of the uterus. Besides these pains which are for the most part attendant on inflammations, there are others which have a different signification; they are sometimes more severe, than the preceding; as, for instance, that produced by lead colic, a pain which comes on in paroxyms and is commonly lessened by pressure.

Various other morbid sensations are experienced in the abdomen, but their characters are too indeterminate for them to furnish any assistance in diagnosis; M. DANCE (*loc. cit.*) excepts from these, the epigastric uneasiness experienced by chlorotic females or those affected with profuse leucorrhœa; the lumbar and hypogastric pains which come on at the approach of menstruation, and the sensation of a ball rising up through the abdomen felt by hysteric persons; to these we may add the pain in one of the sides, especially the left, immediately under the margin of the false ribs and extending to the spine of the ilium of the same side, pointed out by DEWEES (*Diseases of Females*, 1st Ed. 213.) as indicating a prolapsus of the womb. Finally, we may remark that the absence of pain and the insensibility of the abdomen to pressure, offer no conclusive evidence of the non-existence of inflammation of the viscera of this cavity. Of this, numerous cases might be quoted, some of which will be hereafter adduced."

Nearly connected with the subject of this extract, is that of *abdominal pulsations*. Having in our last number published from a correspondent, the history of a fatal case of obscure chronic disease, attended throughout with great abdominal pulsation, though no lesion of any kind was discoverable after death, we are tempted to make another extract from Dr. Hays, for the purpose of presenting what he has collected and embodied, on the subject of this phenomenon:

"*Abdominal pulsations resulting from causes not as yet well determined, and regarded as dependent upon a nervous affection*.—These pulsations are for the most part perceived principally at the epigastrium, and occasion there a throbbing, and sometimes a tumefaction, calculated to lead to a belief of the existence of an aneurism of the cœliac artery. They frequently extend also along the aorta even as far as the iliacs. In persons who are not very fat, when lying on their backs, the pulse of the aorta can always be easily detected, if pressure be made a little to the left of the median line, about half-way between the navel and the scrobiculus cordis; and in certain cases this pulsation is painfully felt by the patient himself. This occurs most commonly about the middle period of life, and appears to be more frequent in females than males. It is in nervous and hypochondriac persons, individuals labouring under derangements of digestion, who are subject to hemorrhoids, and in hysterical females, often after an obstruction or suppression of the menses, that this affection has been most frequently observed. Zuliani, (*De Apoplexia*, Lips. 1790, p. 79,) Pinel, (*Nosog. Phil.*) Albers, (*Ed. Med. Surg.* III. 12.) Senac, (*Traite des Malad. du Cœur*,) De Haen, (*Heilungs Methode, uberstebztron Plantner*, Leip. 1782, b. 2, s. 29.) &c. describe these pulsations as a common attendant upon hypochondriasis. Dr. Albers relates the case of a man about forty years of age, severely afflicted with hypochondriasis, attended with oppression, tendency to fainting, complete sleeplessness, &c. in whom a very strong pulsation could be felt along the whole course of the aorta, and even in the left iliac. After the use of gentle purgatives, and the discharge by stool for several days of a pitchy black matter, the above symptoms ceased, and the pulsation abated, but continued perceptible for nine months afterwards. This affection is well known to be a frequent attendant upon various disorders of the digestive organs. Lewenhoeck relates a case which lasted three days, during which the digestive organs were much disordered. (*Philos. Trans.* Abr. VII. 683.) The following case is related by Dr. Albers: A young woman, whilst menstruating, and who had been for some days constipated, was seized with fainting fits and febrile symptoms, occasionally voiding from her bowels a quantity of black matter, each evacuation of which was followed by a swoon. One morning at five o'clock, Dr. Albers was sent for, as the patient was believed to be dying. She was extremely exhausted, and the

fainting fits succeeded each other almost without intermission. She was only able to tell, in an under voice, that she felt a palpitation in her belly; and when Dr. Albers applied his hand to the part, he felt a violent pulsation extending from the ensiform cartilage to almost the bifurcation of the aorta. "The pulsation of the *heart* was *weaker than natural*, the pulse at the wrist extremely small, and not synchronous with the pulsation in the abdomen." Dr. Albers and Mr. Meyerhoff at first believed the patient to be affected with aneurism; but Dr. Weinholt, recollecting some similar cases recorded by Morgagni, entertained a different opinion, and recommended perseverance in the employment of laxatives and clysters, combining some opium with the former. Under the use of these remedies, in a few days the pulsation in the abdomen and tightness of the chest diminished. The stools were at first of the colour of chocolate, but afterwards resumed their natural appearance. In a short time the patient got well, and remained so several years afterwards. (*Ed. Med. and Surg. Journ.* III. 8.) Thilenius, (*Med. Chir. Bemerk.* Frankf. 1789. s. 211-217,) and Mr. Hodgson, (*On the Diseases of Arteries and Veins*, p. 96,) notice these pulsations as occurring in persons affected with a flatulence of the stomach. Hau, (*Diss. de Gastrodynia*, Upsal, 1797,) has met with them in cases of gastrodynia. Professor Chapman, in his lectures, states, that he attended a female in whom the pulsations were so violent, as actually to raise up the bed-clothes. They appeared to depend upon disordered digestion, and were cured by remedies directed to that affection. Albers has met with these pulsations in cases of hemorrhage from the intestinal canal; and he says that hemorrhoidal patients, especially when inconvenienced by compression of the tumours, often complain of throbbings about the spleen, which are distinctly perceptible to the touch; and pulsations in this last situation were also experienced in a labourer who was subject to bilious attacks, and whose case is narrated by Tulpius, (*Obs. Med.* Amst. 1652. Lib. II. Chap. 28.)

Morgagni, (Epist. 39, art. 18.) describes the case of a woman forty-four years of age, who, after a suppression of the menses for some months, was attacked with palpitations in the epigastrium; and there was an obstruction of the menses, in one of the cases mentioned by Hippocrates. Dr. Albers has seen these pulsations supervene at the commencement of pregnancy and occur at every new gestation. He reports (*Loc. Cit.* p. 11.) a case in which this was so constant that the woman relied upon that sign in preference to all others. The pulsation was sometimes so violent that the husband assured Dr. A. that it might be heard distinctly. It ceased usually after the third month. Senac (*Trait. des Malad du Cœur.*) has met with the affection under consideration, in chlorotic patients, and it is often present in hysterical women. Albers, (*Loc. Cit.* p. 12.) &c. Professor Mott relates (*Loc. Cit.* p. 356.) a very interesting case occurring in a female 20 years of age, of sanguine temperament, and very delicate and irritable habit; the mother of two children; who constantly since her marriage had been subject to attacks of hysteria, great difficulty of breathing, with a most frightful sense of suffocation, great palpitation

of the heart, and a distressing throbbing of the arteries of the head and superior extremities. During convalescence after the birth of her second child, she was suddenly attacked with a strong pulsation in the epigastrium, opposite to the origin of the cœliac artery. This pulsation was synchronous with the action of the heart, could be seen externally, was unattended with any tumour, and was most violent in the afternoon and evening. Tonics and antispasmodics, gentle and regular exercise, and a residence in the country, improved her health, and the pulsation entirely left her.

In a case related by Teale, (*Treatise on neuralgic diseases*, Case XIII.) pulsation of the epigastrium was attendant upon spinal irritation, and we have also met with it in cases of a similar character.

All these facts seem to indicate that the pulsations under consideration are really dependent upon some nervous affection. M. Dance inclines to the belief that the solar plexus and its ramifications have something to do with their production, and he quotes, in support of this, an experiment of Sir Everard Home, instituted with the view of determining the influence of the nerves upon the arteries. Mr. H. having laid bare the carotid artery of a rabbit, applied caustic potash upon the neighbouring branches of the great sympathetic, which soon caused a violent beating of the artery. (*Trans. Roy. Soc. Lond.* 1814.) We are led, ourselves, to believe that they are, for the most part, somehow dependent upon spinal irritation, from having seen them in connexion with that affection, and from the striking similarity between the accompanying symptoms and those attendant upon that disease. A comparison of the cases to which we have just referred, with those related by Teale in his admirable work on neuralgic diseases, will bear us out in this opinion. It is not easy, however, to explain the precise mode of connexion between the cause and effect in these cases.

The *diagnosis* may generally be determined by attention to the following circumstances. These pulsations often vary in force and frequency, appear suddenly, and disappear in the same manner, and are not always synchronous with those of the heart. In aneurisms, auscultation shows an increase in the calibre of the artery; and the pulsations caused by an impulse communicated by the arteries to a tumour, arise gradually, increase in the same manner, and they are synchronous with those of the heart; and this last is also the case in aneurisms.

These pulsations being merely a secondary affection, the *treatment* must be directed to the cure of the primary disease. When this last is spinal irritation, the treatment proper for that affection, (*q. v.*) as, the local detraction of blood by cups or leeches, followed by blisters or tartar emetic ointment to the spine, are to be employed. When connected with dyspeptic symptoms, with hypochondriasis and hysteria, the treatment calculated to remove those complaints (*q. v.*) is to be resorted to. In the hypochondriacal patient whose case is related by De Haen, the pulsations were cured by active opening medicines; and in two cases related by Albers, in which there had been previous constipation, the pulsations ceased under the use, continued for some days,

of mild purgatives, which evacuated a quantity of dark matter from the bowels. In the female whose case we have quoted from Morgagni, and in whom these pulsations succeeded to suppression of the menses, they were promptly cured by bleeding. Cold baths, mild tonics, and moderate exercise, will also be found useful in some cases."

The contributions of Dr. Coates are to the surgery of the abdomen; and, from their nature, constitute on the whole, the most interesting part of the monograph. The following are his observations on the treatment of wounds of the abdomen; and as the subject is one of deep importance, we shall make no apology for the length of the extract:

"These wounds may be simple, or complicated with a protrusion or with a lesion of some of the abdominal viscera. When simple, our first care should be to arrest the hemorrhage, if any divided superficial vessels are detected. The patient is then to be placed in that attitude which most completely relaxes the abdominal muscles, and the wound closed as speedily and accurately as possible. This can be generally effected by adhesive strips alone; and indeed the cases are rare which require the additional aid of the suture. Even incisions of several inches in length, complicated with protrusions, are constantly cured by these means, and when stitches have been employed after great operations on the abdomen, it has sometimes happened that hiccough, sickness, and other alarming symptoms have supervened, and could be alleviated only by removing this cause of irritation. Still it is well known that the presence of stitches passed through the peritonæum and abdominal parietes, do not always occasion material inconvenience. There are cases in which the suture must be used, and there are some epidemic states of the atmosphere, during the prevalence of which, its employment may be preferable, for reasons already mentioned. The objection urged by Mr. S. Cooper against the suture, that the stitches not unfrequently cut their way out by ulceration before they have accomplished their office, appears to us to be not a very valid one; for when no other evil consequence follows their introduction, this little additional extension of the wound is unimportant; the parts through which they make their escape generally heal behind as rapidly as they give way before them; and previous to their removal, sufficient adhesions are formed between the edges of the wound to prevent their retraction, and the purpose of the suture is in great degree accomplished. Still, the needle should never be resorted to, except under pressing emergency; and the necessity for its use will be less frequent in proportion to the manual dexterity of the surgeon in managing the adhesive strips and other dressings.

The edges of the wound being brought into accurate coaptation, the next step required is the application of a suitable bandage and compress, to give general support to the abdomen, to assist the action of the strips or suture, and to resist the tendency of the viscera to es-

cape at the orifice. To accomplish these objects, it is generally directed that a flat compress should be applied over the simple pledget spread with cerate, which is laid upon the previous dressings. This compress is to be acted on by means of a bandage enveloping the whole abdomen.

The roller is here liable to obvious objection, as its application is difficult or impossible, without inducing improper exertion, or change of position, on the part of the patient. Nor is the many-tailed bandage, as ordinarily prepared and employed in these cases, entirely free from inconveniences. The best apparatus for producing pressure on the abdomen, is a bandage of strips, so arranged as to overlap each other in two-thirds of their width, and stitched together by a seam along the middle of their length, which should correspond with the spinal column.

When a portion of omentum or intestine protrudes through the wound, it should be returned as speedily as possible, care being exercised to handle these parts as little and as gently as may be. If, as sometimes happens in extensive incisions, the protruding parts have dirt or any foreign matter adhering to their surface, this should be carefully removed by a stream of water gently warmed, or by the light touch of a soft sponge. If the wound is narrow, the surgeon should assure himself of the perfect reduction of the viscera by passing his finger within the peritonæum, and gently making it perform there a circular movement, so that the smooth internal surface of the membrane may be felt around the whole circumference of the incision; for it is possible that a portion of intestine may be lodged between the fasciæ of the abdomen, and thus remain without the peritonæum, while it is apparently returned into the cavity. In straight incisions, it is rarely difficult to retain the viscera within the abdomen without the use of sutures; but when irregular or angular wounds take place, they are sometimes indispensable. In England and this country, the interrupted suture is generally employed; but in France, they prefer the quilled suture, and we think with reason. This suture is applied by means of two curved needles, threaded by a flat ligature, formed of several waxed threads, doubled upon themselves, so as to make a loop at one extremity. With each of these needles the abdominal parietes are punctured from within outward, at two opposite points, distant about six or eight lines from the edge of the wound. When a sufficient number of these ligatures have been passed, an assistant pushes together the divided edges, already relaxed by the position of the patient; the surgeon introduces a small cylinder of wood, linen, or waxed cloth into the loop presented by each ligature at one of its extremities toward the lower side of the wound, and after parting the threads of the other extremity of the ribbon, he ties them in a bow-knot over a similar cylinder on the opposite side of the wound. These ligatures are allowed to remain four or five days, unless some accident in the case requires their being removed sooner. (Marjolin, *Op. Cit.*) A simple ligature of waxed silk, of suitable thickness, is perhaps preferable, upon account of the small space which it occupies, and the readiness with which it can be procured at all times.

When a portion of intestine is protruded, together with a part of the omentum, it is laid down as a standing rule, that the former should be reduced before the latter, or, in general terms, that the part which protrudes last should be reduced first; and the propriety of this advice is obvious. This object is generally accomplished without much difficulty by acting upon the intestine with the two index fingers laid in the wound, either by a steady pressure exercised by both at once, or by the alternate action of each finger separately.

Difficulty may occur in our attempts at reduction, from several causes. In small wounds the protruded intestine may be so surcharged with its ordinary contents, or with air, as to make its return by simple pressure impossible; it may be strangulated, or in a state of inflammation, or it may have formed adhesions to the edges of the wound. In larger incisions, a spasmodic contraction of the muscles may diminish the cavity of the abdomen, and dilate the wound, so that the former can scarce contain the whole bulk of the viscera, and the edges of the latter cannot be properly approximated; there may also exist a general dilatation of the intestines by gas, which may render it difficult to enclose them within the parietes of the abdomen, even when free from spasm, as was observed by Dr. J. R. Barton in the case of the unfortunate girl murdered by Gross; and also in that of a patient upon whom he operated for the reduction of a strangulated inguinal hernia, several years ago. In the former instance, the bowels were returned without puncture; but in the latter, this was impossible, and Dr. B. made a valvular opening into the protruded intestine, which he effected with a bistoury. The air being evacuated, the hernia was reduced with ease. The external wound was closed by suture and compress; but on the succeeding day the gaseous secretion had again accumulated, and reproduced the protrusion. Finally, in defiance of all opposition, the intestine forced its way through the intervals between the sutures, and the patient died. No effusion had taken place in consequence of the puncture.

The embarrassments from inflammation, strangulation, and adhesion, occur also when the omentum alone protrudes. We will notice each of these causes of difficulty in succession.

When the protruded intestine is neither inflamed nor adherent, but refuses to return in consequence of the bulk of its contents, whether solid, fluid, or gaseous, it is sometimes recommended to withdraw an additional portion of intestine, in order to distribute the contents of the fold over a larger space, so that it may be more readily urged forward through the constricted orifice into the abdomen: the intestine, thus emptied of its contents, is generally returned with ease. In pursuing this plan, it should not be forgotten that an increased amount of mesentery is involved in the wound, so that if too much intestine is withdrawn, the additional bulk may increase instead of diminishing the difficulty of evacuating the protruded part. When the distension is occasioned by air, we cannot perceive the advantage of the step just recommended; for if the protruded part is already so tightly

grasped as to prevent the passage of so rare a fluid, it is hardly likely that anything short of the enlargement of the wound can facilitate the reduction.

Paré occasionally punctured the inflated intestine, in such cases, with a small needle; and Rousset, Garengeot, Sharpe, and Van Sweiten, recommend the practice; but when the puncture is made with a fine needle, the mucous coat closes the aperture almost immediately, and thus destroys its usefulness. Chopart and Dessault therefore recommended the employment of a large round needle; the use of such an instrument is perhaps still more objectionable, for the orifice may still be closed by the projection of the mucous coat, while the danger of inflammation is considerably increased. Boyer, Richerand, and Marjolin, limit the puncture for the evacuation of air to cases in which the enlargement of the wound is rendered inadmissible by some peculiarity in the circumstances; and when compelled to resort to this measure, they employ a fine triangular trochar, by means of which they are sure of accomplishing their object. A very delicate instrument would be best adapted to this operation; it should be flattened like that employed in paracentesis abdominis, and should be inserted with its edge in the direction of the length of the intestine; for the experiments of M. Travers show us, that transverse wounds of these parts are more serious than those which are longitudinal. Most of those who recommend puncturing in these cases, advise that a fine ligature should be passed round the intestine and through the mesentery at the point opposite the puncture, so that by drawing the ends of this ligature out at the external wound, we may keep the little opening in the viscus in contact with its edges, after the reduction has been effected: this is done in order to lessen the danger of extravasation; but the precaution is now generally held unnecessary. Marjolin thinks that if any fear of effusion is entertained, it would be better to seize the sides of the puncture with a dissecting forceps, and apply a delicate ligature, cutting off both the extremities close to the knot, as was successfully practised by Sir A. Cooper for a perforation of an intestine in a case of hernia. (*Op. Cit.*)

La Faye, Blancard, Sabatier, S. Cooper, &c. discard the plan entirely; and although we think that the dangers of so slight an operation have been exaggerated by some, it is difficult to conceive what circumstances can require the measure in question, except when a large portion of protruded intestine becomes dilated to such a degree that the parietes cannot be closed over it. Certainly it should never be practised when the reduction can be accomplished by the enlargement of the wound. When the protruded portion of intestine is strangulated or inflamed, no time should be lost in enlarging the wound and reducing it. Venesection, both before and after the operation, is decidedly proper, when the inflammatory action is considerable. We must not hesitate to return the inflamed intestine, whatever may be the violence of the inflammation or the peculiarity of its colour, unless it is unquestionably in a state of gangrene: it may be dark red or almost black, yet if it retains its firmness, it should be returned; but if it be in a state of mortification, other modes of proceeding become

necessary, which will be noticed under the heads of wounds of the intestines and artificial anus.

In enlarging a wound of the abdomen, it is generally recommended that the incision should be carried upward, as the danger of hernia is considered greater when the injury is seated near the lower part of the cavity. The instruments commonly employed are the probe-pointed curved bistoury, with or without the aid of a grooved director. While operating, the patient should be placed in the posture best calculated to relax the part, and the surgeon holding the intestine toward the lower part of the wound, with one hand uses the index finger as a guide to the bistoury or the director. If the latter can be introduced to the bottom of the wound without difficulty, the operation may often be performed at a single effort; but if this cannot be accomplished with facility, the aponeuroses, muscles, and skin may be first divided by successive retractions of the knife, the incisions being carried from within outwards, and as nearly as possible in the direction of the fibres. Care must be exercised to avoid the track of any considerable arterial branch, and that of the suspensory ligament of the liver, for reasons already mentioned.

When, in consequence of neglect or unavoidable delay, adhesions have been formed between the protruded parts and the edges of the wound, these should be divided if possible, to permit the reduction to be accomplished. Great care is required in effecting this division, for we are compelled to carry the incisions in various directions. The probe-pointed bistoury is generally considered as the best instrument in these cases; but it would be difficult to lay down very strict rules where the circumstances of the accident may vary so widely. If the adhesions are so firm that the intestine cannot be reduced, the case is still by no means desperate when the wound is large enough to prevent the danger of strangulation; for as Callisen has observed, the protruded viscus sometimes becomes covered by granulations, and a cicatrix is formed over it.

When the spasmodic action of the abdominal muscles opposes a barrier to the reduction of the protruded bowel, or prevents the closure of the wound, we must have recourse to the free abstraction of blood by venesection, and the internal exhibition of opiate remedies, until the spasm is conquered.

In very extensive wounds of the abdomen, enormous quantities of intestine may escape. One of the most singular cases of this nature is that related by Mr. Hague, surgeon at Ripon. The patient, a lad of twelve years of age, received a wound about four inches in length, on the left side of the body, commencing about two inches below the scrobiculus cordis. "The great arch of the stomach, and the whole of the intestinal canal, (duodenum excepted) contained within the abdomen," protruded. The stomach had been evacuated by vomiting. Mr. Hague proceeded to reduce first the stomach, and then the intestine, following the course of the canal. Some difficulty was experienced in preventing the exit of the reduced viscera, from the pressure of the diaphragm in breathing, that function being performed with much labour. Five sutures were employed, and supported by adhe-

sive strips. The patient recovered. (*Ed. Med. and Surg. Journ.* V. 129.) In cases of this description, general inflation of the bowels may render reduction very difficult; but if due care is taken to contract the wound as the intestines are returned, and to preserve the edges in contact at one extremity, by the aid of an assistant, the object can be accomplished in almost every instance. As a last resort, if all other means fail, we may then puncture the bowel with the trochar mentioned above, introducing the instrument obliquely through the several coats, and allowing the gas to escape through the canula. The instrument should be so small as not to require the closure of the puncture by ligature to prevent effusion, of which the danger is fortunately less considerable than many surgeons have represented.

The intestines themselves may be implicated in the original wound; but this is not the proper place to treat of these very serious complications: they will be discussed under the head of Wounds of the Intestines. It is also unnecessary to repeat the proper consecutive treatment of wounds of the abdomen, that subject having been already enlarged upon in the preceding section on punctured wounds.

It has been stated that the omentum may be strangulated, inflamed, or adherent to the edges of the wound, when it protrudes without being followed by intestine. If no great difficulty opposes its reduction, it should be returned immediately; but if adhesions have taken place, there are two modes of proceeding recommended under different circumstances. If the protruded portion is small, and no unpleasant symptoms are present, we may cut it off to the level of the integuments, and leave the remainder to cicatrize with the wound: this is supposed to lessen the danger of subsequent hernia. When the protruded portion is larger, or when there exists a sense of dragging about the stomach, nausea, vomiting, or other symptoms of strangulation, the wound should be enlarged immediately, and the reduction accomplished. To avoid the danger of lacerating the delicate omentum, it is best to dilate the wound from the lower angle when we have occasion to use the grooved director as a guide to the bistoury.

The omentum, when protruded from the abdomen, is sometimes attacked by gangrene. This condition is recognized by the clammy softness of the mortified part, by its colour, generally gray, but sometimes dead white, by its fetid odour, and by the discharge of a greasy fluid from its cells. In other cases, when this part is on the point of becoming gangrenous, it is hard, and of a deep-red livid colour: yet it does not bleed when cut. It was formerly advised that the gangrenous omentum should be included in a ligature placed above the dead portion; that the mortified part should be cut off, and the rest returned into the abdomen, the ends of the ligature being secured externally. This dangerous plan is now discarded; its grave inconveniences have been demonstrated by an observation of Poiteau, and by the experience of Louis and Pipelet. The proper mode of treatment in such cases is as follows: if the gangrenous portion is small, we leave it to nature; if it is voluminous, we examine it in order to assure ourselves that no fold of intestine is inclosed within it. The greater part of the dead matter should then be cut off, with the scissors, in order to

relieve the patient from the disagreeable odour, and the rest enveloped with a strip of linen, spread with cerate, or moistened with weakened liquid chloride of soda. The remainder of the eschar is detached in the course of a few days, and the healthy portion lying in the bottom of the wound, closes it, and contracts strong adhesions there. The wound may also be enlarged, and after having displayed the epiploon, we may remove the gangrenous portion, by cutting through the sound parts. The reduction should then be attempted, after tying, or applying tortion to the divided arteries. This last method has the advantage of preventing the dragging produced by the adhesion of the omentum to the wound; but it greatly enhances the danger of traumatic peritonitis and consecutive hernia. (Marjolin, *Op. Cit.*)

Gun-shot wounds penetrating the abdomen, when not complicated with similar injury to the organs contained within the cavity, seldom require any other treatment than the free use of local and general antiphlogistic measures. They are rarely followed by protrusion of the intestines; but the ball is not unfrequently lodged within the cavity or its parietes. Little aid can be afforded by the surgeon in cases of this character. The ball may subside, by its weight, toward the lower part of the abdomen, or into the pelvis; it may remain suspended among the convolutions of the intestines, surrounded by false membranes; or it may be lodged in the spine or muscles of the back or pelvis. In some cases the presence of the foreign body gives rise to no considerable inconvenience; but in other instances it excites violent inflammation, with purulent secretion into the cavity of the peritonæum; or produces a limited abscess which may be discharged either into the same cavity, or, as sometimes happens, into the alimentary canal. In the latter case, the patient may survive. M. Marjolin relates an instance in which one of these abscesses resulting from a contusion, opened at the same time into the small intestine and the bladder; a great quantity of pus, mingled with matter from the intestine, being evacuated by the urethra: this fistulous communication had continued many years when the patient consulted him.

The majority of cases in which gun-shot wounds involve the organs within the peritonæum, terminate in the death of the patients from effusion and the consequent inflammation, during the first few days after the accident. Even when this immediate danger is past, the effusion may still take place at a later period, on the separation of the sloughs: this last occurrence, however, is very rare, as it can only happen when the peritonæum has failed to form adhesions around the eschar.

The number of recoveries, notwithstanding the formidable dangers which surround these injuries, is very considerable; but for the details of cases and treatment, we must refer the reader to the articles headed *Intestines*, *Bladder*, *Stomach*, &c., where the diagnosis and surgical management of particular accidents will be discussed more fully than would be proper in this general sketch."

The article ABORTION, is from the veteran pen of Professor Dewees. The following are his remarks on the use of opium:

"Opium, in some form or other, is oftentimes of the highest consequence, and should never be omitted after the system is properly prepared for it by rest, and, if necessary, by blood-letting. Much judgment is, however, required for its exhibition, that it may not do injury. It should never be given when the pulse is highly excited, or when its operation is habitually unfriendly to the system. In the first instance it should be preceded by rest and the loss of blood; in the second, the Ext. Hyosciam. may be substituted with much advantage. In such cases this remedy should be given in proper quantities to calm the system; and it must be repeated in sufficient doses, and at proper intervals, to overcome uterine contraction. It may be administered by the mouth; or by the rectum, in the form of injection, or suppository.

The use, however of opium, has its limit; for it must not be persevered in after it is ascertained that it would be neither useful nor practicable, to subdue uterine contraction; and this must be ascertained by an examination per vaginam, as recommended above, and if the os uteri be found open, or the neck distended, it would be hurtful to persevere with the opium; or when the mammæ have become suddenly flaccid, after having been distended and painful, it would be found equally useless; for in this instance, the embryo, or fœtus, has certainly lost its life, and it would be mischievous to interrupt pains, as it is by their agency alone that the lifeless ovum can be expelled; and the quicker this is done, the better for the safety of the mother."

Of Astringents, he prefers the acetate of lead, extract of rhatany, and a decoction of red rose leaves, made by boiling half an ounce of the petals, in a pint of water. The treatment, both constitutional and local, which the professor recommends, is of course judicious, because the result of long and diversified experience. We may be permitted, however, to add to it, the use of large enemata of iced water, and, when the patient becomes greatly reduced, the application of sinapisms to the epigastrium.

We have, thus, given a pretty full, and, as we think, fair notice, of the first part of the Cyclopædia of Practical Medicine and Surgery, a work that cannot fail to prove acceptable to the Profession in the United States, whether it should turn out to be a new compilation from *original authors*, or a compilation from other *compilations*. We sincerely wish well to the enterprise, and shall continue to announce its progress,

from time to time, laying such portions of it before our readers, as may seem to be of paramount interest.

The work is expected to be comprised in 40 parts, of 112 pages each, making eight large octavo volumes. The price of each part is fifty cents, or twenty dollars for the set.

Art. IX. Imponderable Agents.

Elements of Electricity and Magnetism, and Electro-Magnetism; embracing the late discoveries and improvements, digested into the form of a Treatise. By John Farrar, Prof. Harvard University. Cambridge, 1826.

Some departments of human knowledge are confined within narrow bounds, and have, comparatively, but few relations with the rest. They may be studied without the aid of many others; and, like the Caspian Sea, can be explored to their utmost limits, without the preparation or the events of a lengthened voyage. Others connect themselves with almost every department, and their extended limits, like those of the ocean, run into the most distant recesses of science. Of this kind is the study of man, in his physiological and pathological states of existence. Hence, we find, that to be profound physiologists and physicians, it is indispensable that we should direct our attention upon almost every branch of natural, and indeed moral science. Man, in reference to the agents and influences which act upon him, may be said to occupy a focal spot in the creation;—to be, as it were, in the very centre of gravity—having every surrounding object in action upon him, as all bodies press towards the centre of the earth. By the instrumentality of these various agents, exerting themselves according to fixed laws imposed on them by the Creator, *he lives, moves, and has his being;* but while, in their regulated action, they sustain him from birth to death, and administer to his enjoyments, their excessive, defective and untimely operation, are the chief, if not the sole causes,

of the various bodily calamities, which so often cripple his frame, pervert his complicated functions, and terminate prematurely his existence. All his knowledge of the sinister effects of these agents upon his system, is the result of experience. *A priori*, he could know little, even of their ordinary influences; and still less could he comprehend, without long-continued observation and experiment, in what way they are deeply and essentially concerned in the production of the phenomena of life. And still, in the progress of discovery, it has been revealed to him, that several of these agents *are* the immediate causes of all his vital functions. From the beginning it must have been known, that in addition to food and drink, two subtle and invisible agents which surround him, are indispensable to the continuance of life. These are caloric and atmospheric air, or its oxygen. Within our own times, a number of facts have been developed, which seem to indicate, that electricity, galvanism, magnetism and light, (whether considered as distinct substances, or as modifications of one,) are in some unknown—perhaps incomprehensible—manner, concerned in producing the phenomena of life. We must not be understood to intimate a belief, that oxygen, or caloric, or electricity, is the *primum mobile*, of animated existence; for we know of no effects, produced by any or all of those agents, which would justify us in such an assertion. The phenomena of intellection, volition, sensation, and even organization, appear clearly to indicate some higher, though hidden principle—hidden except by its effects;—and that oxygen, caloric and electricity, are but operatives in its service; operatives, however, without which it could make no manifestation. It being ascertained, that these gaseous or imponderable substances, play an important part in the performance of our functions; we must admit, *in extenso*, the propriety of studying the laws which govern their actions, among the various objects of nature; and, especially, their influence on man. Thus every physiologist and physician, should, to a certain extent, be a chemist and a natural philosopher. Not endowed with the knowledge of a manufacturer of acids and air-pumps, but familiarly acquaint-

ed with the *modus agendi* of oxygen, caloric, light, galvanism, electricity and magnetism, on the living system. To this end, chemistry and the rudiments of natural philosophy, have been made essential branches of study, in all our medical schools; but we are sorry to say, that notwithstanding this regulation, they are too often regarded as unimportant; and that a majority of the faculty (including ourselves) enter, sojourn and leave, the ranks of the profession, with far less knowledge of these interesting subjects, than of the qualities and capacities of the persons, whose names are recorded in our *ledgers*. This glaring defect, like most professional imperfections, is attributable to our teachers. Very few of them have, at any time, had more than a superficial knowledge of these matters, and the stream cannot rise higher than its fountain. It is to raise the waters of the latter, that we indite these paragraphs, having placed at the head of this article, the name of a standard work which belongs to the curious and difficult department, which is so generally made a *pons asinorum*, by our students. We are far from presuming to think, that any exhortation, or any philippic of ours, can oxiginate that which has no affinity for oxygen, excite that which cannot be electrified, or infuse polarity into what cannot be magnetized; but there are grades of intellectual hebetude, and although we may not rouse the sluggard, whom no summer can thaw out of his *hybernaculum*, we may hope to excite some galvanic contractions, and impart some impulse, to the idler, provided he have but industry and enterprise enough, to subscribe for our journal, and read what is here addressed to him. That students and physicians, in a single year, waste more time than would be necessary to acquire a knowledge of all the facts, individual and general, which have been developed by the philosophers who have cultivated these abstruse departments of science, we hold to be a more incontrovertible proposition, than most which belong to the profession; and we would respectfully put to them the question,whether this negligence is compatible, either with their own dignity, or the safety of their patients. Should any one doubt, whether there is "room for improvement" among

us, let him reflect on the indications that are afforded by such inquiries and suggestions as these, which may be given as specimens:—"That oxygen and caloric are commutable, and that the former, being taken into the blood through the lungs, is transformed into the latter, and constitutes animal heat;—that there are two kinds of electricity, the resinous and the negative;—that cold is the antagonizing power to heat, and that there are two kinds of caloric, one of which is positive, the other negative;—that magnetism is probably a modification of cold;—that the difference between the electrical machine and the galvanic pile, may, perhaps, be this, that one generates vitreous, and the other resinous electricity; finally, that shooting-stars are owing to the combustion of carbonic acid gas."

Mistakes of this kind, are not so much errors of fact, as of principle; and indicate an ignorance of several branches of physical science, which is truly discreditable to the profession. We have said that the fault is with our teachers, but should have added—not our medical teachers only. It is quite impossible to study the laws of light, caloric, electricity and magnetism, without some previous acquaintance with mathematical science, an attainment within the reach of very few who are put to the study of medicine. It is notorious, that the greater number, indeed a large majority of our medical pupils, become such, without the least knowledge of geometry, algebra or mechanics, from never having been placed in academies where they are taught; and even those who pass through a college course in most of our institutions, some how or other, are protruded from them, with the exact sciences spread over the *surfaces* of their minds, as electricity is diffused *upon* bodies; and they lose it about as soon. We seriously doubt, whether a tythe of the profession, junior and senior, in the United States, are able, for want of preparatory learning, to read the works, a specimen of which is placed at the head of this article.

That treatise, bearing on its face the name of Professor Farrar, of Harvard University, is a translation from the *precis Elementaire de Physique* of M. Biot, a distinguished French

mathematician and natural philosopher. Were we competent, we should not undertake an analysis of this able production, for our leading object, is merely to excite the younger members of the profession, to a profounder study of the subjects which it embraces. But we may be permitted to make a few extracts, as specimens of the work. It has been commonly said, that electricity accumulates on the surface of non-conductors, but penetrates conductors in all directions. M. Biot thought this opinion worthy of being investigated, and has accordingly tested it by a series of experiments. He was induced, *a priori*, to believe that the fluid occupies the surface only, of conductors as well as non-conductors. These are his words:

"Now, from what we have already learned upon this subject, it would seem very probable that the electricity is confined entirely to the surface of conducting bodies, and that their interior particles have no effect in retaining it; otherwise, it is not easy to perceive how the mere circumstance of equality of surface in the case of two bodies in contact, should produce between them an equal division of electricity, whatever be the substance of the bodies themselves; or how this equality should take place, when one of the bodies is solid and compact, and the other hollow and presenting scarcely any thing but a simple surface; whereas all these things become simple and intelligible, on the supposition that the electricity, in a state of equilibrium, is diffused only over the surfaces of bodies, without penetrating into the interior."

Passing over the experiments by which this fact was demonstrated, we shall transcribe his conclusion:

"We may rest assured, therefore, that the electric principle, whatever it may be, resides on the surface of conducting bodies, and not in their interior. We know, moreover, by further experiments, that the air retains it upon the surface, and is the only obstacle which prevents its escape from the body. Hence, combining these two facts, it will be seen, that the electric principle always distributes itself over conducting bodies in a very thin stratum, whose exterior surface being contiguous to the air, and confined by the pressure of this fluid, is the same as that of the electrified body, while the surface, almost coincident with the other, since the stratum is very thin, must be determined according to other laws, to be deduced from observation."

The electric fluid, then, is found only on the surfaces of bodies, and this is as true of conductors as non-conductors.

The difference between the two is simply this, that it moves, on the former, with the utmost freedom, and may all pass off through a single point, if that point be connected with the earth; but it travels with great difficulty, or not at all, on the surface of non-conductors.

The following extract will present the conclusion of our author on another interesting point in the science of electricity:

"We hence learn, that the principles of the two electricities exist naturally in all conducting bodies, in a state of combination by which their effect is neutralized; this we shall in future call *the natural state of bodies.* We now perceive that friction, which seemed to be a means of creating them, serves only to disengage them from their combination, and to render one of them sensible by absorbing the other; and this is the reason, undoubtedly, why we constantly observe that the rubbing body and the body rubbed, exhibit contrary electricities. Finally, since the simple influence of an electrified body, presented at a distance, forces these two electricities to separate, and to arrange themselves so that those of a different nature are the nearest to each other, and those of the same nature the most remote, in enunciating this fact, we are compelled to admit, *that opposite electricities attract, and similar electricities repel each other,* according to laws which we shall be able to determine by experiment."

From electricity, Biot proceeds to galvanism, then to magnetism, and concludes with the deeply interesting phenomena of electro-magnetism. We commend the whole to such of our readers as would prepare themselves for studying the influence of these powerful agents on the animal economy.

Professor Farrar has added to the volume a number of notes, one of which is an extract from a memoir of M. Gay-Lussac, on the construction of lightning rods; a subject with which every physician should be acquainted, as he is liable to be consulted by those who presume that he is able to give correct advice. We shall make a condensed abridgement of these instructions.

1. The lightning rod should be a cone or pyramid, divided at the top into several points, and the higher it is elevated into the atmosphere, the greater, *ceteris paribus*, will be its efficacy. It will protect a circular area, the diameter of which is four times the length of the rod. It should rise from 15 to 20 feet above the top of the building.

2. It should be so thick, that the wind acting upon this upper part, cannot bend it, and present sufficient surface to transmit the discharge from the cloud, without being fused or permitting any of the electricity to pass into the building. A rod from half an inch to three-quarters in breadth, will be of sufficient size; though the lower part should be of greater dimensions.

3. It should always terminate in *moist* ground, as dry earth is a non-conductor. After sinking about three feet into the earth, it should extend off horizontally, 12 or 15, and, if practicable, terminate in a drain or gutter; if not, it should be sunk several feet deeper into the ground, and, throughout its whole extent, be surrounded with charcoal, which will not only protect it from rust, but carry off the electricity. If its extremity be made to terminate in several prongs so much the better.

4. If the rod be composed of several pieces, they should be so joined together, as to keep them in close and permanent contact.

5. The points of the rod should be composed of copper, plated with silver, as iron is liable to become oxidated.

When a discharge of electricity takes place from a cloud to the earth, it is because the two are in opposite states, as to that fluid—one vitreous and the other resinous, or positive and negative. If a house happen to stand on a portion of the earth thus charged with an electricity different from that of the cloud, a discharge from the latter to the former, may fall on the building. If it have no conductor, it may be injured and its inhabitants destroyed: if it have a rod, formed and fixed according to the instructions given above, it may be, unhesitatingly, said, the edifice is safe. The rod, does not bring down the lightning from the cloud, but only seizes upon and conducts it to the earth, when in descending, it happens to pass near the building. We can, at this moment, recollect three discharges, in this city, which reached the ground through very humble objects, quite contiguous, to others of the same kind, which were much loftier; showing that, it is the condition of the earth, and not the attraction of the objects on its surface, that causes the discharge.

Miscellaneous Intelligence.

ANALECTIC, ANALYTICAL, AND ORIGINAL.

I. Analectic.

Ad Sylvas Nuncius.

1. *A Sketch of Broussais' Doctrines, drawn up by himself.*—It was in the year 1804 that I began to be sensible of the imperfect and erroneous notions of disease, which were then prevalent. I labored diligently for five years, and in the year 1809, appeared the "History of the Chronic Phlegmasiæ." At that time I was at a distance from Paris, and engaged in the army hospitals. The work was one of an entirely experimental nature, and obtained an honorable mention from those who were able to judge of its merits. At the time at which it was published, the attention of physicians had not been at all directed to the subject of chronic inflammations, especially of those which have their seat in the membranes lining the visceral cavities. Pinel does not even mention them in his Nosographie. In their place we find the unmeaning terms "organic diseases, or defects, and atrophy or decay without any appreciable cause." Corvisart too was ignorant of the true nature of internal morbid changes. If in a case, which was neither consumption, nor disease of the heart, nor any of those inward swellings denominated at that time organic alterations, he observed the progressive decay of a patient affected with a chronic malady, he attributed it to a state of mere feebleness and cachexy, (malus habitus;) expressions vague and utterly unmeaning, or rather we should say extremely mischievous, as leading to erroneous indications of treatment. The History of the Chronic Phlegmasiæ corrected these faults, and shewed that inflammation is the chief agent in the production of those diseased growths and changes which we meet with in the centre of the viscera, and also in the texture of their lining membranes, and that these are the real causes of that incurable exhaustion and decay, which had hitherto been always referred only to debility of the solids, and depravation of the fluids of the body. Moreover it proved that such debility and such depravation are often curable; it pointed out the signs and epochs of their curability, and also the means for their cure. Henceforth the term "organic disease"

had a definite and appreciable meaning; medical men were satisfied in attempting to soothe, and not vainly to eradicate such; and their attention was chiefly directed to prevent its occurrence, or progress, as soon as they discovered the germ in those obstinate and intractable irritations which equally invade all structures and tissues. The treatment of such cases was no longer empirical, but rational and consistent. The class of fevers was at this period as imperfectly understood, as those of cachexies and of organic diseases. Continued fevers were divided into two sorts; the one attributable to the inflammation of a particular organ; the other being viewed as essential, or independent of any local affection: but such a phrase as "essential" means nothing; for we are still puzzled to say, to what cause are we to ascribe an essential fever; in this state of ignorance, the physicians tried to characterize such a case either by the predominating symptoms, or by vague and idle conjectures and speculations; if the secretion of the bile was much increased, the fever was termed "bilious;" if that of the mucous surface in any part, a "mucous or pituitous" fever; when the temperature of the body rose high, then it was a "burning" fever; and when it fell much, it was a "cold, or algid" fever; again fevers were called asthenic, putrid, nervous, and ataxic, as they happened to be attended with exhaustion, with putrescency, and with symptoms of disturbance of the nervous and muscular symptoms; there were also hospital, camp, and prison fevers: and fever with petechial, miliary, or other eruptions. In some cases, the character and name were drawn, it would seem, from an idea that a baneful agent was working its effects upon the patient, and defeating the physician's efforts; and hence such fevers were styled "malignant." Does this language convey any knowledge? or does it not rather prove the confusion and chaos in which the subject was involved, and mislead the practitioner not only in his attempts to reason on the nature of the diseases, but also in his efforts to cure them? Hence one set of men was drawing the indications of their treatment from the state of the biliary, or nervous secretions; while another set was talking only of debility, putridity, or malignancy. Pinel was the first to perceive, and to aim at correcting these errors of the schools. He tried to localise some fevers, as for example the bilious fevers, under the name of meningo-gastric, and the pituitous, or mucous fevers, under that of adeno-meningeal. But he has not told us in his Nosographie, of what nature is the gastric disorder, nor yet of the causes of the increased quantities of mucous, which is characteristic of the second class; moreover he fell into the egregious contradiction of attributing these two sorts of fevers, sometimes to irritation, and sometimes to a primitive change of the biliary and mucous secretions, at the very time that he designated them, essential fevers. Then he vaguely ascribed all his ataxic fevers to a disorder of the nervous system, and most confusedly classed together all fevers in which the vital energies are depressed, and termed them adynamic. Not only was there no localisation of the disease, but the indications of treatment in such a system were most injurious: for what is the cause of the loss of power, or debility in fevers, but simply inflammation of some of the vis-

cera? Such was the state of the science, when I published, in 1816, the first edition of my Examination of Medical Doctrines. In it I pointed out the absurdity of expecting to advance the science of medicine, merely by forming groupes of symptoms into particular diseases, which is not less absurd than to say that an assemblage of ten or twelve symptoms is the virtual cause of those morbid changes which we observe after death. The symptoms in short are nothing but the external and obvious evidences of the malady, which is involving the organs in abnormal changes. I proposed to view fevers, as we do inflammations, to localise them in certain parts, or organs, and I attempted to show that the morbid changes of structure which are going on, are the real existing causes of fevers, and not, as had hitherto been supposed, the effects of them. At the same time, I strongly inculcated the propriety of extreme caution in our reasoning on those cases, where the "mobile" of the fever is not apparent. These new doctrines encountered much opposition, but they gradually gained ground, and became more and more adopted, as will be seen by the following events. In 1812, was commenced the large "Dictionnaire des Sciences Medicales," the articles of which were deeply imbued with the doctrines of Pinel, till the year 1817, from which time some sprinkling of the physiological reasonings began to appear. Before the work was completed, the "Dictionnaire Abrege" was brought out, and in it the physiological medium was preponderant. In the large dictionary, fevers were enumerated as "essential, or idiopathic;" in the abridged one, we read of none but such as are symptomatic. In both, the doctrines which I had unfolded in my History of the Phlegmasiæ, were insisted upon, in discoursing upon all the diseases which are included in the catalogue of inflammations. For the last sixteen years, almost all medical researches have taken their rise from, and have been based upon the physiological doctrines. The subject of inflammation is studied, discussed, and specialized, much more than it was formerly; and where inflammation cannot be proved to exist, irritation is supposed to be present, and is now believed to be the agent in producing a host of organic diseases, which were before merely enumerated in detail. The relations between the changes and vitiations of the fluids, and the different sorts and degrees of inflammatory and irritative affections, are attentively and most zealously examined. In 1821, appeared the second edition of my "Examen des Doctrines" which was published originally in one volume, then in two, and at length in the fourth edition in four volumes. Soon after this period I began my system of "Physiology applied to pathology;" it was brought out in numbers for four successive years. It is devoted to the examination of the etiology of diseases, and to the tracing of those functional aberrations from the healthy to the diseased state, which are caused by the influence of the external agencies continually operating on the living body. This work, as well as the preceding ones, has received the honor of translation into several languages. In addition to these, the "Annales de la Medecine Physiologique" have appeared in monthly numbers for the last eleven years, and my Treaties on Irritation and Madness in 1825, in which last work the cause of the "positive philosophy" was plead-

ed with a boldness and a freedom, which might have been dangerous to the author. Lastly the cholera morbus, which has so puzzled and bewildered all medical enquiries, must be viewed through the enlightening medium of correct physiology, before we can hope to arrive at a successful therapeutic. We have explained our views upon this subject in an essay which was lately published. According to the physiological school of medicine, no disease is ever primarily and essentially general, that is, affecting equally at once every part of the system. Disease begins always in one individual organ, even when the disease depends upon a cause which induces an alteration in the humors, or fluids of the body, such as the exciting cause of small pox, typhus, &c. &c. The great aim of the practitioner ought therefore to be, to discover the primitive seat of the disorder, as he may thereby often be enabled to check, and even strangle the nascent evil. By following this mode of examination, French authors have surprisingly reduced the catalogue of malignant fevers, which are now seldom met with, except when medical assistance has been called too late, or has not been accepted. Look at the reports of the different hospitals, and mark how seldom we find the term of general or essential fevers, and how prevailing is the belief that all diseases ought to be regarded primarily as local affections. Even when the physician does not see the case, until the disturbance has been propagated to, and has involved all the functions of the economy, he can do much to relieve his patient by following the physiological method, and directing his attention to those organs which have chiefly suffered. Hence we perceive the absurdity of recommending in fevers only one set of remedies to the exclusion of all others; the remedy must be adapted to the condition and susceptibility of the affected organs. The operation of all agents which influence and modify the state of the system, ought to be our especial study, and the effects of these upon the moving and sentient powers, our only guide in judging of the results. Thus we admit no a priori reasonings and conclusions, into our school; neither any preconceived opinions, nor any implicit following the "verba ullius magistri." Let it not be supposed that our doctrine is that the abnormal changes and modifications, which we have alluded to, are the only immediate cause of all diseases; we know that these causes may exist in the humors, in certain poisons, in the vicissitudes of heat and cold, in the imponderable agents, and probably also in influences which cannot be appropriated by our senses, and we are not opposed to any researches calculated to explain or illustrate the action of these causes, and to discover antidotes to them, but we simply maintain that a disease can be recognized only by the aberration from the normal condition of the moving and sentient powers of the body, and that the study of this aberration, sometimes as excessive, at other times as impaired, or irregular action, can alone furnish to the medical man the correct method of ascertaining whether his remedies are beneficial, or injurious. Formerly a patient, who was getting worse, instead of better, while under medical treatment, was often told, "Have patience, it is the medicine which is acting upon you;" a gouty man was consoled by hearing that his physician

must not relieve him, for his sufferings were in sooth necessary for the object which nature had in view; and even in many acute diseases, the patient was congratulated on any increase of fever and restlessness, upon the ground that a salutary crisis of his malady was at hand! How often was the raging thirst of fever met with hot drinks, which only add fuel to the distress! We have a memorable instance of this folly in the late treatment of the cholera; but now, thank God, the poor sufferers are permitted to have as much cold water and ice, as they desire. There are indeed cases, in which the patient must submit to the annoying effects of certain medicines: but such cases are infinitely more rare than was formerly believed; but yet we must acknowledge that much injury is often done by their employment; thus, in dyspepsia, how frequently do we see stimulants and tonics ordered, although it is obvious that they must either increase the distress, or only change its character. In short, the art of sparing suffering and pain is not so ancient as many suppose, and has been fostered chiefly under the happy influence of the physiological method; for the very essence of this method is to bring relief to suffering organs, and not to regard diseases merely as assemblages of certain symptoms, which must either co-exist, or succeed to each other; by this foolish practice we neglect the very increase of those evils which are successively added to the inseparable distresses of the malady. Is it not a common remark of a disciple of the old school, when summoned to a patient—"we must wait; the disease has not yet declared itself?" But such dangerous absurdities are gradually passing away; the mind of the physiological physician is occupied with facts and realities, and not with preconceived and a priori reasonings.

In enquiring into the nature of a disease, there are but four objects of research—1, The organ primarily affected. 2, The operating cause by which it has been affected. 3, The influence of this organ upon the other organs of the body; and, 4, The agents by which the disorder may be removed. There is nothing of idle speculation here—no empty hypothesis on the intimate or proximate nature of diseases, for these are beyond our intelligence; we do not pretend to give an explanation of the phenomena of life; our only aim is to take notice of whatever disturbs its moving and sentient powers, or disorders the texture of the solids and the composition of the fluids, and to compare it with whatever has the effect of restoring the one and the other to a state of normal rectitude. How, then, can any one be so unjust as to denominate the physiological method, a system of a priori reasoning and practice, or as a monomania, or a partial, contracted, and exclusive doctrine, which attends only to one set of measures, and disdainfully rejects every other?—*Annal. de Med. Physiol. June*, 1832.

In order to unfold the views of this distinguished reformer of medical science, we are induced to give a short abstract of the essay which he read in October, before the Academy of Sciences of the Institute at Paris, as a candidate for the chair vacant by the death of M. Portal. It is entitled "Memoir on the Philosophy of Medicine."

He remarks at the outset, that, at different epochs of history, very different opinions have been held on the meaning of the phrase "med-

ical philosophy." Hippocrates deemed it to consist in closely observing the march of diseases, when they are little modified by the interference of art. Galen made it to reside in the study of the humours; Paracelsus and his astrological followers, in that of the stars; Vanhelmont and Stahl brought it down again to earth, and fixed it in the centre of every organ, designating it the "archæus" and the "animus" which presides over the body. At length, the immortal Haller shewed that it was more philosophical to search for its abode in the irritability of the tissues, and to ascribe health and disease to certain states of these, rather than to subtile and irritable nonentities. But soon a new set of theorists arose, who maintained that all the phenomena of life, both in health and disease, are referable to the action of the nerves; but, unfortunately, the nervous functions are little known, and in course of time a being or essence, semi-intellectual and semi-material, partaking somewhat, too, of the nature of the "archæus" of Vanhelmont, and of the "animus" of Stahl, was admitted into all medical reasonings, as the presiding influence of the animal economy. This new philosophy was simple, to all appearance; but it was speedily split, and two rival symptoms sprung from the division. In the one, which was upheld by Barther and the Montpellier school, a vital force or energy was made to reign over all the tissues and humours of the body; but its seat was not limited to the nerves, as was the case with its parent doctrine; according to this philosophy, there were as many vital forces as there were vital phenomena: in the other, the elements were "force" and "debility," terms which are synonymous with an "excess and deficiency of" excitability, or with "accumulated and exhausted irritability." Such was the Brownonian doctrine, a doctrine which led to a most pernicious system of therapeutics, for remedies were now employed with such whimsical and irrational intentions, such as to increase or diminish excitement, to affect the irritability, as it chanced to be redundant or defective, just as, before, they were addressed to the archæi and animi, and with equal disregard to the effects which they produced on individual organs. It was Sydenham who first proposed the classifying of diseases; Sauvages seized the happy idea, and, comparing diseases (which are only modified conditions of a living body) to plants (which are living bodies themselves,) gave birth to nosology! Nothing was talked of but classes, orders, genera, and species, as in botany; his adage was, "symptomata se habent ad morbos, ut folia, et fulcra ad plantas," an adage whose absurdity must now be apparent to every one, but whose influence, strange to say, has not yet entirely passed away. It is surprising that no one could see the folly of comparing pain and heat to a leaf and a branch, and a spasm to a flower!! It is useless to advert any longer to these idle abstractions and vagaries of the brain, or to expose more of the ridiculous conceptions which other authors have, at different times, propounded; for surely medical "ontology" is for ever abolished. It was formerly the great problem among physicians—"a disease being given, to find its remedy;" but latterly the problem had been somewhat changed, or rather a new problem was in vogue—"a disease being given, to find its place in a nosological catalogue." How

humiliating to think that the minds of men were so diverted from the true path of enquiry, and that they allowed their judgments to be blinded and misled by the ridiculous nothingness of empty, sounding words; but let us not boast, but rather ponder on these errors, for the improvement of ourselves.

Our next theme is, to strive to find out some more rational system of medical philosophy. The eclectic school have put forth their claims; they tell us "there is something good and true in all the preceding doctrines—let us only reject the bad and retain the good." Such is the method of those who profess not to be "exclusives." But we need not waste time in refuting the reasonings of the eclectics, a name which ought to be reserved for close observers and able experimenters, whose time and talents are engaged in verifying facts which have been long admitted, and in seeking after others which are novel and interesting. How is it possible for an eclectic to arrive at any logical correctness, if, surrounded with so many statements and data, brought forward by one party and refuted by another, and encountering so many opinions and hypotheses utterly conflictant with each other? What could a "neophyte" do amid such a labyrinth of perplexities? Eclectics are not known in the true sciences, where the simplicity and the small number of facts appertaining to any theorem, render its demonstration easy and intelligible. The great error of most preceding writers has been, in seeking after the primary and proximate causes of disease; and, even in the present day, we hear men often regret the misfortune of not being able to attain to the knowledge of the essential nature of diseases; they are unwilling to admit any evidences or elements of certainty and truth in science, but such as are proved by the testimony of the senses, forgetting that there is another kind of evidences obtained, by inductive reasonings, from facts which have been well established; and such evidences are not less real than a shadow, a noise, a reflection, or evidences of a material object existing somewhere; they are admitted into mathematics, chemistry, mechanics, agriculture, and exercise a mighty influence in all discourses upon these sciences.

None can be ignorant of the stupendous results derived, through this means, by Cuvier in fossil geology. It is, indeed, difficult to obtain this sort of evidence in medical researches, but the cause of this is, that the facts, or rather data, are so very numerous and complex; but we must not be discouraged, for it is only by the medium of such evidence, that we can hope to arrive at a knowledge of the causes of disease—to a correct nosology, and a rational and beneficial system of therapeutics. This class of evidences is weak and deficient at present, but we must labour zealously in enriching its domain, for it constitutes the most important aim of medicine; yet such is the medical philosophy of our days, that rigid induction has been less esteemed than mere description; the former is falsely designated as an hypothesis, theory, a system a priori, and an empty conjecture. If a treatise on any disease, the only aim and end of the author are, after describing its course and progress, and detailing the pathological changes in fatal cases, to establish that the disease could not be at all different from

what it really was, or that the symptoms were merely the effects of the morbid states and actions which were going on in different viscera, and no attention is paid to appreciate the operation of the exciting cause, and of the agencies which modify the actual state of disease, and scarce any thing is thought of but the hunting after nostrums and specifics. The habit of expecting a necessary succession of symptoms during a definite period, in most maladies, and especially in those which have been denominated putrid and malignant fevers, typhus gravior, &c. is most pernicious and baneful. We have labored to expose the dangers of such a method, and we deem it one of the noblest endeavors of a physician to shew, that the greater part of these affections may be arrested at the different epochs of their development, by means of a scientific application of those agents which modify and control the functions of our organs. In conclusion, the philosophy of medicine which we have proposed, consists in a more rigorous observation of the effects of all the external agents on the human frame, and of the influence of the different organs of the body on each other.—*Archiv. Gen. Oct.* 1832.—*Med. Chir. Rev.*

2. *Death of M. Portal.*—This distinguished veteran died on the 23d of July last, at the good old age of 91, as rich in honors as in years. He was the Nestor of the French Physicians; first physician to Louis XVIII. and Charles X., perpetual president of the Academy of Medicine, member of the Academy of Sciences, and of many other celebrated societies. His "History of Anatomy and Surgery" has long been esteemed and admired; but his greatest work was the "System of Medical Anatomy," which laid the foundation of, and rendered popular, the pursuit of sound pathology in France.—*Ib.*

3. *On Water, applied externally, as a Remedial Agent.*—In our last Number, we gave an extended analysis of a very valuable paper on the above subject; we now continue the subject, and shall direct our readers to the fittest method of employing the remedy. In most cases, especially those in which the nervous system is much affected, as in the 3d, 4th, and 5th series, it is of importance that the bath, should be in the bed-room, or in an immediately adjoining apartment as the patient ought to go to bed immediately afterwards; in other cases, as in those of the 1st, 2d, and 5th series, it is better that it be at some distance, as the exercise of going to and coming from the bath is beneficial. The heat of the bath ought to be about 86 degrees, or thereabouts; the affusions ought to be made with the water of the bath at first, and then gradually with cooler water. As a general rule it may be said that the temperature of the bath should be about 86 degrees, and the water for effusion from 6 to 10 degrees lower. With regard to the duration of the bathing, this must vary according to the nature of the malady. In the cases of the 3d and 5th series, those, namely, characterized by lethargy and nervous stupor, from five to eight minutes is long enough; but in cases of the 1st, 2d, 4th, and 6th, series, viz. those of cerebral fatigue and exhaustion, fatigue of the brain and of the organs of sense, nervous fevers, and neuroses of the

sympathetic nerve, 25 to 30 minutes may be mentioned as a proper time, the effusions being employed during the six or eight last minutes. Now the number and frequency of the baths is also a point of importance to determine: when the patient is afflicted with stupor, nervous fever, or lethargy (as in the 3d, 4th, and 5th series,) it is seldom that a single bath in the 24 hours is sufficient; generally two baths at least are necessary; sometimes 3, 4, or even 6 and 8, according to M. Recamier, must be taken in one day, before the patient experiences decided benefit, whereas, in instances of the 2d and 6th series, one bath daily is amply sufficient. A third interesting question of inquiry is, the proper hour of the day for the use of the bath. In cases of the 1st and 6th series, the most fit time is shortly before the evening repast, or not long before going to bed; the appetite, in the one case, is often much invigorated, and in the other, sleep may probably be soon induced; it may be proper that the patient should take a light supper after he is in bed—*Revue Medicale, Sept.* 1832.

Remark.—We have repeatedly witnessed the most agreeable effects from the employment of bathing, in a somewhat similar form to that recommended by the French physicians, in many cases of cerebral exhaustion, of melancholy, of general debility uncomplicated with organic disease, &c.; we suggest the cotemporaneous effects of effervescing draughts, such as the seidlitz powders, to the more robust, and the citrate of ammonia to the more feeble and nervous. The wonderfully soothing effects of a saline purgative are not very generally known, and may probably be rather despised, by those who have never experienced their effects on themselves, or witnessed them in others. Suffice it to say, that Lord Byron mentions it of himself, that when a fit of the "blue devils" was impending over him, a spoonful or two of Epsom salts always restored his spirits more quickly than the finest wines, and we know a writer, of distinguished talent, who confirms the truth of the remark by his own practice.—*Ib.*

4. *Ulceration of the Stomach.*—Dr. Graves visited an unmarried lady, aged 25 years, who had suffered much from pain in the stomach, nausea, vomiting, acidity, and indigestion. These symptoms first appeared after a severe shock and fright. She had sometimes intervals of five or six weeks at a time, free from complaint, but these intervals had lately become much shorter. She was pale and emaciated. She was free from pain for some months after Dr. Graves commenced attendance, then pain came on attended often with a discharge of colored fluid from the stomach, sometimes resembling coffee-grounds. This state continued for some months, when the pain and tenderness disappeared, though vomiting remained, after every kind of food. She was at length worn out. On dissection, an ulcer was found in the neighborhood of the pylorus, but completely cicatrized. It had penetrated the mucous and muscular coats, but had been arrested by the peritoneal covering, there was no maturation or scirrhus in the neighborhood. The site of the cicatrix was distended into a kind of pouch, which received a portion of the contents of the stomach, and thus formed a kind of valve which prevented the egress of chyme

through the pyloric orifice, nutriment was thus cut off from the system, and death was the result.—*Dublin Journ. No V.—Ib.*

5. *Dr. Graves on Periostitis.*—Dr. G. divides periostitis into two kinds—diffused and circumscribed. The former is that which usually terminates in necrosis, and falls to the care of the surgeon; the latter constitutes nodes. It is to the latter affection that Dr. G. limits himself, in a clinical lecture delivered at the Meath Hospital.

Circumscribed periostitis may arise from cold; most commonly from a specific cause, as syphilis, mercury, or scrofula.

It presents some varieties. First, it exists without detachment of the periosteum from the bone. The membrane becomes inflamed and thickened; the bone beneath vascular. There is now pain and tenderness in the part, sometimes with swelling and discoloration of the integuments. The affection becomes chronic, the symptoms rather decline. Then the periosteum becomes more dense, even fibro-cartilaginous. When this change has taken place, Dr. G. thinks it doubtful whether the diseased mass is ever again absorbed. We are not so sure of this. We see now and then, rarely, we admit, the most solid and bony nodes diminish under the influence of mercury. If healthy bone and fibrous tissue admit of absorption, why may not new osseous or fibrous structure? When ossification takes place in a node, the external lamina of the true bone beneath is in process of time absorbed, and, at the same time, a cancellated structure is developed in the node, the two orders of cancelli thus becoming continuous. The tibia of prostitutes are often much disfigured, from irregular bony elevations of this description.

Secondly, periostitis may be attended with detachment from the bone beneath, and of this there are several varieties. The first variety is this. In a space, varying from twenty-four hours to eight or ten days, an elevation appears on some part of a bone, with pain and tenderness on pressure, forming a tumour apparently solid, but, on accurate examination, somewhat elastic. Soon a gradual diminution of the pain and swelling occur, the fluid effused under the periosteum is absorbed, and the subjacent bone and periosteum become again united. This process generally occupies some time, but occasionally is more speedy. The tumours which rapidly form and disappear on the scalp are of this nature. The surface of the bone does not die. Usually ulceration of the skin does not occur in this variety; but, if it does, the cure is effected by granulations arising from the vascular surface of the bone. In the second variety, matter is effused beneath the periosteum, the bone affected becomes vascular at a little depth, but the surface is white and dead, and consists of a thin, worm-eaten, cribriform lamella, which, after some time, separates, and opens for itself a passage through the integuments. The cure is effected by granulations from the vascular part of the bone beneath.

Scrofulous periostitis is a simultaneous affection of the bone and periosteum. Sometimes, in vitiated constitutions, the periosteum becomes affected, from ulceration commencing in the skin, as in rupia, ecthyma, &c. In all, except the first species of periostitis described,

Dr. G. recommends cutting through the integuments and periosteum, as recommended by Mr Crampton.

The scrofulous periostitis (node) is attended with milder symptoms; less pain and tenderness; less swelling; and occurs at an earlier period of life. Not but scrofula may be combined with the deleterious effects of mercury, or with syphilis. The history and the circumstances must determine this. Mercury and syphilis, too, may combine to produce node, indeed it is probable that, in most cases of node, this is the fact. Some of these cases are most perplexing and most miserable.

Dr. G. adverts to the treatment. As local means, leeches, blisters dressed with savine ointment, the antimonial ointment; in obstinate cases, cutting down to the bone; when ulceration takes place, and there are pale granulations, the introduction of a stick of nitrate of silver, and touching a given part of the surface every day. As to the general treatment, when the constitution is strong, and there is otherwise no objection, the use of mercury; and this Dr. G. considers the best mode, if the symptoms be violent, even though mercury should have been already given. Mercury carried to decided salivation, and continued three or four days afterwards, is particularly suited to the painful species of cranial periostitis already alluded to. When the symptoms are less violent, the pil. plummeri, blue pill in alternative doses; and in debilitated persons, the corrosive sublimate perhaps, or De Velno's vegetable syrup. Dr. G. has seen several restored to health by the agency of the latter. A great objection to the use of mercury among the poor, even in hospitals, is their subsequent inevitable exposure to cold.

Next to mercury, Dr. Graves ranks colchicum and tartar emetic; the former preceded by bleeding, and combined with an opiate and magnesia. Colchicum cannot well be combined with antimonials, on account of the disturbance of the stomach which they occasion. Narcotics are serviceable, during the whole course of the disease. When it becomes chronic, sarsaparilla may be given, with nitric acid.

We think these observations of Dr. Graves not unworthy of attention. The point to which we would particularly direct our readers' notice, is the employment of incisions when the pain is severe, the tension of the periosteum considerable, and inflammatory action present. We are quite alive to the powers of mercury in acute fibrous inflammation, and, indeed, in chronic; yet still, on the whole, we would rather do without it if we could. There is too much reason to suppose, that node would seldom occur as a sequela of the venereal *per se*, and even when, by mercury, we arrest the acute inflammation, we suspect that we are laying the foundation, in many cases, of ulterior mischief; of more extensive inflammation of the bone and periosteum. In the treatment of periostitis, we would rather try strict antiphlogistic treatment and incision first; and, if these failed, we would reluctantly be driven to mercury. It is with node as with some forms of the pustular and tubercular eruption: if we are too easily

persuaded to introduce mercury, we not unfrequently complicate the case still farther, and diminish the chances of the unfortunate patient.
Lond. Med. and Surg. Journ.—Ib.

6. *Chemical Pathology of the Blood in Cholera.*—By M. de Canu, Professor to the School of Pharmacy at Paris.—The most remarkable and obvious change, is the singular increase of the proportion of the solid matters, to the watery portion; the following experiments clearly demonstrate this fact:

In the first:

Water	66
Solid Matter . . .	34
	100

In the second:

Water	74.9
Solid matters . .	25.1
	100

In the third:

Water	48
Solid matters . .	52
	100

Mean proportions.

Water . . .	63
Solid matters .	37
	100

In healthy blood, the proportion of the watery part is about 0.78; and if we take this as a standard, the blood of cholera patients contains sometimes twice the normal quantity of solid materials; hence we can readily explain the treacle-like appearance of this fluid, as it flows from a vein in the arm. I have not detected any considerable changes in the fibrine, albumen, and colouring matter; this last, indeed was of darker hue in the arteries, and seemed to have experienced a sort of modification, analogous probably to that which takes place in the conversion of venous into florid blood. In attempting to ascertain the exact proportions of the different constituents of cholera blood, much uncertainty arises from the difficulty of separating the serous portion; but my observations do not agree with those of Hermann, of Moscow, who states, that cholera blood offers sensible traces of acidity. The relative diminution of the alkaline carbonates is always appreciable, sometimes indeed to such a degree, that they can with difficulty be detected; and since these salts, as well as albumen, and an extractive matter, which has been compared to osmazome, are found in the stools, we may fairly attribute the increased thickness of the blood to the draining of the serous part by the intestines.

The white and apparently fibrinous matter observed in the rice-water stools, seems to me, to be rather of the character of mucus, than of fibrine; and I am more inclined to this opinion, as the fibrinous portion of the blood was not found defective.—*Ib.*

7. *Treatment of Hooping Cough.*—By Professor Autenrieth.—No internal medicine is given, except for contingent symptoms, and the only remedy used is friction with tartar-emetic ointment (℥iss add ℥j. axungiæ.) A portion of the size of a nut, is to be rubbed on the epigastric region three times a day. On the second or third day, an eruption of vesicles and bullæ appears; the friction is to be continued: the eruption spreads, and becomes pustular like that of small-pox; the friction may now be applied to any other part, but the eruption on the epigastrium is not to be permitted to pass too quickly off. In order to insure the efficacy of the treatment, we must not be satisfied merely with producing pustules; the rubbing ought to be continued till small ulcerations in the intervals between the crusts appear. The above treatment is to be steadily pursued for 8 or 12 days; if the eruption prove very painful, no application is so good as a hemlock fomentation.

Autenrieth has found this method most successful in two severe epidemics, during which he did not lose one patient. He does not approve of the watery solution of the tartarised antimony, and of the tincture of cantharides, recommended by Struve. Henke, an eminent German physician, has seen numerous cases of pertussis much benefitted by a combination of bark and opium; he has also employed, with advantage, various stimulant antispasmodics, as ætherial preparations, ammonia, &c., but very judiciously urges the practitioner to draw the distinction between inflammatory and spasmodic hooping-cough, as it must be quite unnecessary to say, that a plan of treatment applicable to the one form may be most pernicious in the other. —*Ib.*

8. *On the Reproduction of the Crystalline Lens, after the operation for Cataract.*—In the 14th vol. p. 384, of the Philadelphia Journal of the Med. and Phys. Sciences, we gave an account of the experiments of M. M. Cottreau and Leroy d'Etiolles on this subject, and which seem to prove that the lens was reproduced. Similar experiments since tried by Dr. Barkhausen, of Berlin, were, however, attended with different results. This subject has been still more recently investigated by M. Mayer, and the January number of the Archives Generales, contains a memoir from him in relation to it. M. Mayer examined the eye of an old woman, on whom the operation of couching had been performed several years previously. There was no trace of the depressed lens; the vitreous substance occupied its place, and immediately behind the anterior wall of the crystalline capsule, was observed the posterior wall or layer, with the vitreous humour pressing forwards upon it. The following experiments, among many others, were performed by M. Mayer. The lens was extracted from the left eye of a rabbit, which was killed three days afterwards. No trace of a new lens was found at this period, nor on the fourth, fifth, sixth, or seventh days; but on the eighth, the crystalline capsule contained a small ring of crystalline substance, which could be separated from the capsule. At the end of one month a large ring of crystalline substance occupied the place of the removed lens. In another rabbit, examined about the same time after the operation, a

large white annular lens, with an opening in the centre, was found in the capsule, which adhered to this new lens. In eight weeks the new crystalline presented several white granular points arranged in a circle, having an opening in the middle; and in four months and a half it was not yet completely regenerated; for it was deficient at the centre, leaving there a rounded aperture, at the place where the capsule had been cut during the operation.

Soemmering has given us an account of four dissections at different periods after the operation on the human subject.

In the first, the patient had been couched eight years and a half before his death. In the place of the crystalline capsule, two semilunar whitish cheesy formations were formed, attached by their peripheral margin to the zonula Zinii, and floating free at the inner margin; they were doubtless the remains of the crystalline capsule. The new crystalline was transparent, gelatinous, and imperfectly formed. The former one had been completely absorbed, but a small piece of the original capsule was found imbedded in the vitreous humour.

Case II. *Three months after Couching.* In the place of the former lens Soemmering observed an annular transparent gelatinous deposit, imperfect at the centre, which was occupied with a fine, almost diaphanous and arachnoid membrane, situated right behind the pupil, and forming a septum between the aqueous and vitreous humours.

Case III. *Two years after Couching.* Similar appearances were discovered. A ring of transparent substance, of the consistence of jelly, in the situation of the lens of the left eye; in the right one, which had been also operated on, the new deposit was only semicircular, the upper part of the circle being deficient. Probably the cause of this was that, during the operation, the upper half of the capsule had been completely torn from its adhesions.

Case IV. *Three years after Couching.* The annular "renflement" or new deposit, had been very regularly formed; it was slightly and equally convex on both its surfaces, and was quite free from any adhesions to the uvea.

It is to be kept in mind that in order to display the annular crystalline substance the eye must be immersed in strong alcohol, by which the new deposit is rendered slightly opaque. Soemmering was at first puzzled to determine whether it was really a substitute for the removed lens, or was merely a product of inflammation, but he was speedily satisfied that the former was the case. Sometimes the ring is imperfectly formed; and in other cases we find only isolated points or grains. These cannot be the debris of the original cataractous lens, as some have imagined, for the simple reason that these grains are perfectly transparent, and the cataract was opaque. The preceding facts sufficiently show that there is a reproduction, although an imperfect one, of the crystalline lens; but we have reason to believe that an indispensable condition is a sound and healthy state of the capsule, and especially of its front layer; if this be either much torn and destroyed, or if it be rendered opaque by disease, there is no regeneration of the crystalline. In all probability, the secretion of the new substance is chiefly, if not altogether, from the inner surface of the

anterior wall or layer of the capsule; and as this layer adheres intimately to the contained crystalline, no traces of the cavity or liquor of Morgagni can be henceforth discovered. The process of regeneration proceeds invariably from the circumference to the centre; and is always found interrupted at the place where the capsule has been cut or lacerated during the operation; the rent in the capsule is occupied with cellular substance. Hence the crystalline substance is never entirely reproduced, but always presents in the centre, or opposite to the injured part of its capsule, an opening which is filled up with a fine cellular tissue. The shape of a new crystalline is generally that of a three-quarter moon, the horns of which nearly touch each other. In the experiment on the rabbit, which was allowed to live for four months and a half after the operation of extraction, the new crystalline had this form, with a free space in the middle, occupied by a cellular web.

M. Le Roy d'Etiolle and Soemmering state that they have found the new crystalline free and unadherent to its capsule; the observations which M. Mayer has made do not coincide in this respect with theirs; it is a point left open for examination. It is worthy of remark that the mass of the new crystalline almost always exceeds that of the original; but that the entire eye very generally becomes somewhat shrunk and contracted for some time after the operation. This shrinking is found to extend even to the optic nerve, and that, too, beyond the decussation as far as the thalamus. It is conjectured, however, that in favorable cases the eye and its appendages may resume their original volume.—*Archiv. Generales.*

9. *On the Bearing of Epidemics upon Medical Statistics, and Political Economy.*—After a close investigation of the subject, M. Villerme arrives at the following conclusions. "That epidemics diminish both in frequency and intensity in those countries which from a state of barbarity or ignorance, pass to that of civilization, and also in those which pass from a semi-civilized condition to one in which civilization is at its acme. That the lower classes of society being more frequently attacked, consequently more frequently fall victims to the epidemic, than the middling classes, or those in good circumstances. That in causing the disappearance of epidemics, and in diminishing their force and frequency, civilization has attended in a great many situations both the maximum and minimum epochs of life, but more particularly the former or maximum. That in a given number of patients of all ages, the mortality will be found to be much greater in the very young and very old; so that in this respect the laws of epidemic mortality correspond with those ordinarily observed, it results from this, that those epidemics which attack the two extremes of life, are cæteris paribus, the most fatal. That the vaccine has effected at least in the thickly populated country of France, nothing more than alter the period of death, but in those countries the inhabitants of which are widely separated from each other, and who possess the means of subsistence in greater profusion than is absolutely necessary, it undoubtedly increases the population. We should not suppose, however,

that it cannot contribute even amongst us, in any way to produce this increase. In substituting, during a given period, one infant who arrives at the age of maturity, for two who although they consume, die before they are able to produce any increase, the vaccine favors production; and consequently indirectly favors by the employment of its products, or the means produced by its employment, an increase of population. But this effect is very trifling in comparison with that usually attributed to the vaccine. All those measures by which the diseases of infancy are warded off, operate in the same manner; they moreover in suppressing one of the causes of death, lend additional activity to others. That in civilized countries, the most fatal epidemics produce but a transient diminution in the population; the vacancies which they create being speedily filled up, both by marriages and by births, which are proportionably more numerous than ever, and also by the influx of strangers who are induced to come in, by the numerous vacancies produced in the different professions, trades, &c.—But if epidemics do not commonly diminish the population of those countries which they ravage, or at most only for a short period, they at least exert a manifest influence upon the population and its movements; an influence which varies according as the epidemic occurs annually, or at larger intervals. In the former case, that is where the epidemics are annual, as is the case along the banks of water-courses, or in the neighborhood of marshes, the renewal of the population is observed to be more rapid, and the average term of life is shorter; there being very few who arrive at adult or old age. The population does not diminish, and for the simple reason, that marriages take place at a very early age, and in a given time, the number of births greatly exceeds that in other countries. The same space, which in a healthy country would be occupied by the same individual during a period of forty years, will in one in which the causes operating against longevity are particularly rife, be occupied by two or three different persons. And in consequence of these fatal epidemics, the average term of life is reduced to twenty, and in some places even to thirteen years. But supposing the number of individuals to be the same in two different countries, yet their relative usefulness may be very different; in the one, we may have a poor, infirm, sickly population, immense numbers of whom perish previous to the performance of any productive act, and who resemble, if we may be allowed the comparison, a capital lost at sea. Whilst in the other, on the contrary, we have a robust, strong, vigorous class, who may in truth be termed the bone and sinew of the land, and who generally speaking live to an advanced age, or by labor obtain every necessary for themselves and families.

In the second case, or where an epidemic suddenly appears in any spot which has heretofore escaped its ravages, or even should it be characterized by unaccustomed violence in a country which has never been exempt from it, a very sensible diminution in the population will be observed, and immediately afterwards, cæteris paribus, an extraordinary increase in the number of births and marriages; such is the disposition to production at this period, that those unions which have remained uninterrupted, and from which no farther increase was an-

ticipated, have again become fruitful. Finally, not only the yearly number of deaths is diminished, but likewise the proportional number, as if in truth mankind had become more tenacious of life, or less liable to the attacks of the "fell destroyer.' Hence arises the old saying, that 'all epidemics of a fatal character, are followed by seasons of great salubrity,' every thing, however, induces us to believe, that this fact exists only in appearance. We know, that the disease attacks generally speaking only weakly or sickly individuals, and that it consequently leaves a larger proportion of healthy, able-bodied persons, so that although it increases the relative space, it at the same time adds to the period of existence of the individuals remaining. Moreover, this latter change, whatever may be the cause, always exerts as is well known, a sensible influence upon the period of life, as well as upon the number of births."—*Archiv. Gen. Dec.* 1832. *Am. Jour. Med. Sciences.*

10. *New and singular variety of Hermaphrodism*—Being a paper read before the Royal Academy of Medicine, Paris, by M. Bouillaud. Abridged from the Journal Univ. and Hebdom.—In the course of the last year there was carried into la Pitie, a cholera patient of the name of Valmont, a *widower*, sixty-two years of age, by trade a hatter, and said to be given to dram-drinking. He was in the last stage of cholera when he entered the hospital, and he died on the following day.

I shall omit all that part of the post mortem examination which only related to the disease of which this person died; the monstrosity which presented itself to us (Dr. Donne was with me,) is what I particularly wish to notice.

As we had no suspicion about the sex of Valmont, who was treated as a male while in the wards, it was with no small surprise that, upon opening the abdominal cavity, we found in it a *well formed uterus.* We then noted the anormal state of the genital organs, and had those parts of them removed and put in alcohol, which we desired to examine subsequently more at leisure, for the cholera was then raging in all its fury.

M. Manec afterwards requested permission to examine the parts. This gentleman's profound anatomical attainments are well known, and to him I am indebted for the following description, as well as for the plate by which the organs are represented.

In the region of the external genital organs there is a penis of middling size, terminated by a well-formed glans, and prepuce, by which it is covered. The opening of the meatus urinarius is, however, not at the summit of the glans, but towards its lower portion. The bursæ are small, but very distinct, and their integuments brownish, wrinkled and supplied with hair, as in the natural state; they have a raphe dividing them symmetrically, and extending from the prepuce to the anus—the raphe itself being more firm and prominent than is usual in man. The bursæ contain no testicles, nor are there any vestiges of these organs discovered.

The mons veneris is more round and plump than it is commonly

found in males, and it is covered with a moderate quantity of long hair, advancing along the penis, as if to conceal the latter. In the pelvis there are two ovaries similar in their form and structure to those of a girl of fifteen or sixteen years of age. [M. Bouillaud in a note here differs from M. Manec as to the structure of these supposed ovaries, M. B. considering them not as vesicular, but rather fibrous, or as if they consisted of a sort of intermediate tissue between that of the testicles and the ovaries.] Two fallopian tubes are seen, with their attachments, as in a well-formed woman. The uterus, which seems complete in every respect, holds its usual place between the bladder and the rectum, and opens into a species of vagina, to be described presently. The cavity of the uterus has the aborescent wrinkles which are observed in women who have had no children. The os tincæ projects into the vagina, as in the normal state. The vagina about two inches long and of a middling compass, presents the rugæ very conspicuously which are peculiar to virgins. Towards the neck of the bladder the canal contracts; and about the membranous portion of the urethra it is converted into a narrow duct, which from below upwards opens into the urethra by a little orifice about two millimetres in diameter, so that the urethra becomes in fact a continuation of the vagina. There is nothing remarkable about the urethra beyond the point of junction: it is exactly that of the male—having even at its origin the appendage of a regularly-formed *prostate*. There are also the *verumontanum*, and the prostatic follicles present, but no trace of openings to the ejaculatory ducts could be found. Beyond the prostate the urethra is destitute of external covering for eight or ten lines. Farther on, a spongy tissue with a bulbous enlargement, becomes connected with the canal, accompanying it to its extremity, where it is lost in forming the glans. All this spongy portion is attached to the corpora cavernosa, which, strong and well-marked as in the male, are strengthened in their root by a muscular apparatus as complete, and perhaps even more efficient than in the male. The bulbo cavernous muscles in particular, are very long and thick. Cowper's glands are present also, as in the male sex.

Like the testicles, the vesiculæ seminales, and vasa deferentia, are completely wanting. From the inguinal ring nothing more than a dense cellular cord—a rudiment of the round ligament—proceeds, accompanied by a nervous thread and an artery. The volume of this artery is considerable, and it communicates by large anastomoses with the superficialis perinæ, and the branches of the external pudics. The external female organs are altogether wanting.

With regard to other points connected with the general structure of this extraordinary individual, and perhaps scarcely less striking than those of the genitals, so well described by M. Manec, I may observe that the body of Valmont, very diminutive for a male, presents a degree of plumpness and rotundity which gives it much of the appearance of a female. The hands and feet are small, and more like those of a woman than of a man. The pelvis is shallow and wider than it would be in a well proportioned man. The face is furnished with a tolerably thick beard, yet its general aspect is effeminate, and, perhaps owing to its equivocal character, rather repulsive. There is an

abundant supply of fat lining the pectoral and abdominal cavities. The mammary glands are much developed—too much, indeed, for a man, and yet too little for a well-formed woman; the nipples are of the size usual in healthy females.

Looking to the general conformation and volume of almost all the other parts, we should say that this individual maintains a sort of *juste-milieu* between man and woman. The heart, however, was nearly as robust as that of a man of middle size and strength.

From Valmont's own account given upon entering the hospital, it appears he was a widower. Thus an individual, with the essential organs of a female—though with the external resemblance of those of a male—had been placed in the condition of a husband! Having a womb, did he menstruate? or rather, did he exhibit the phenomenon of being affected with hæmaturia regularly once a month? But if, as our most famous physiologists have stated, the fact of being endowed with certain parts indicates the exercise of certain functions, why need we waste time in calculating what must have been the conduct of Valmont? We cannot help thinking, however, that this extraordinary being must have found himself curiously circumstanced. Did the passions of the male, or those of the female, predominate? Did they alternately stimulate him? or was he neutralized by the equal influence of each?

It has been said that, *propter uterum solum mulier est id quod est.* How does the maxim hold with respect to Valmont—a reputed man—and a married man?

In a practical point of view, it may be asked, how should we be able to say, from simple inspection of the exterior, that such a person as Valmont was really an hermaphrodite? Have we the means of forming a diagnosis? The problem is no doubt a difficult one, yet even in the absence of further facts, we might probably venture to affirm *a priori*, that where an individual, as in the case just cited, has a penis moderately (*mediocrement*) developed, without any trace of testicles either in the scrotum or inguinal regions, and where, considered in other respects, this individual would seem to hold a middle place between male and female—in such a case, I say, one might venture to affirm, that there are in the interior of the body some of those organs peculiar to the female, and constituting in so far an hermaphrodite more or less complete; and our decision would be greatly corroborated, if it could be ascertained that such an individual had, during a certain period of life, a monthly discharge of blood, or menstrual fluid from the urethra.

In conclusion, the facts contained in this paper will probably remove all doubt as to the existence of *real hermaphrodism*, however *incomplete*. It is now, we should say, no more than fair to admit that individuals of the human race may be found, who partake at once the male and female type in respect to their genital organs and, with reference to the other organs common to each sex, present a sort of *mezzo termine* between man and woman; a variety of hermaphrodism which does not seem to have sufficiently fixed the attention of teratologists. Those who deny the existence of all other varieties except that to

which they have given the name of pseudo-hermaphrodism, will charge us, no doubt, with a credulity amounting to superstition, for having, even in Valmont's case, admitted the existence of a particular kind of true hermaphrodism: but such a charge will affect us little. We must believe that of which we are persuaded, even though it were a miracle: and, perhaps, of all superstitions, (if we may be allowed the term in speaking of natural science) that is the most worthless, not which believes what does not exist, but which refuses belief to what really does. To conclude in the language of a learned professor: "In matters like the present, which are at variance with received opinions, it is the part of wisdom not only to refuse acquiescence in what has not been rigorously proved, but not to fix too narrow limits to the powers of nature."*—*Lond. Medical Gazette, May,* 1833. *Balt. M. and S. Journal.*

11. *Extirpation of a degenerated ovarium*—By Dr. Erhardtsteim.—Agathe Ducrr, a healthy peasant, aged 31 years, had been favorably delivered four times. Towards the conclusion of her fifth term of gestation, the abdomen became so much enlarged that it was supposed she carried twins. She was, however, only delivered of one female child, and the abdominal tumor merely subsided partially. Five days subsequent to this, Surgeon Ritter was consulted, who found the abdomen largely, but uniformly tumefied, and presenting evidences of fluctuation. In the left iliac fossa a hard tumor could be felt, but its character could not be determined on account of the swelling. Ritter supposed that there might be an extra uterine fœtus. Fourteen pounds of serosity were evacuated by paracentesis, after which he discovered an indurated mass into which he plunged the trocar, and drew off twelve pounds more of water. It was then ascertained that the tumor was formed by a diseased ovaria, and extended from the right ilium to within a small distance of the umbilicus; it presented a hard uneven surface. Ritter resolved upon extirpating this mass, which he did eighteen weeks after the accouchment. The skin was incised over the rectus muscle; this muscle was then divided, and its lower part detached from the peritoneum, and an incision made through that membrane large enough to admit the hand. Some difficulty was experienced in detaching the tumor from its surrounding attachments, but this was finally effected, and at the expiration of fifteen minutes it was withdrawn from the abdomen after having applied ligatures to three blood vessels. A twelve tailed bandage was immediately applied, sponges immersed in cold water were laid over the wound, and the extremities were enveloped in warm flannels. At the expiration of an hour the bandage was removed, and the wound had contracted one third, but a portion of the omentum was found protruding. The latter was reduced, the edges of the wound closed by sutures, and the bandage reapplied. On the day after the operation the patient was affected with repeated syncope, succeeded towards evening by rigors and a feeling of suffocation. It was discovered on the following day,

*M. Dupuytren, in a report on a human fœtus found in the mesentery of a boy of 14.

that contrary to the advice of her physicians, she had continued to nurse her child up to the period of the operation. It was now directed to be again applied to the breast, which occasioned a subsidence of the symptoms. But the secretion of milk ceased; a violent fever continued from the third to the eighth day, and she was affected with great oppression, extreme prostration, tension and tenderness of the abdomen, involuntary digections by stool, paucity of urine, facies Hippocratica, insatiable thirst, bilious vomiting, anxiety and delirium. An insurmountable disgust precluded the employment of internal medicines; fomentations of warm vinegar, however, which were renewed every two hours, provoked a free perspiration by which the patient was much relieved. A considerable quantity of bloody serosity was discharged from the wound on the eighth day, and she recovered her senses. The escape of a large quantity of gas was followed by a mitigation of all the symptoms. (Fomentations to the abdomen, enema.) The discharge from the wound continued on the ninth day, and ceased on the twentieth. A marked amelioration in the meantime took place, and the sutures were removed. On the eleventh, a lactescent discharge took place through the small openings left by the sutures which continued to the ninth week after the operation. During this time all the unpleasant symptoms subsided, and by the ninth week the wound was cicatrised. The tumor weighed twelve pounds. It was covered by a kind of lardacious membrane somewhat tendinous in its character, composed of several layers. The body of the tumor consisted of spherical portions of a lardacious consistence and of variable dimensions, some of which were excavated and filled with serosity. The orifices of the vessels which had been tied, were as large as a writing quill. On the side which corresponded to the ilium, two pouches were discovered, in which the serosity had been contained which was evacuated by the paracentesis.—*Arch. Gen.—Ib.*

12. *Case of hemorrhage of the uterus, arrested by compression of the descending aorta*—By Dr. Loewenhard, of Preslau.—Guided by theoretical views, Ploucquet was the first to advise compression of the descending aorta, in cases of hemorrhage of the uterus. Walter, James, (London Medical Repository and Review, 1825 and 1828,) and Ulsamen, insist upon the excellence of this method, and cite, in support of it, examples drawn from their own practice. In France, M. Baudelocque has contributed the most to make it known, in associating its use with that of spurred rye internally, in cases of hemorrhage produced by the separation of the placenta. The following case appears so conclusive, that we do not hesitate to offer it to our readers. The combination of many energetic means ought to be resorted to only in cases in which alarming floodings threaten to terminate the life in a few moments. A woman of thirty-two years, of a delicate complexion, was delivered on the sixth June, at twelve o'clock, of a fine child. Instead of the placenta, the midwife observed a stream of blood augmenting constantly in volume. She endeavored to detach the placenta and stop the hemorrhage; but in vain. At half past four, consequently five hours and a half after the commencement of

the flow, the reporter was called. The patient resembled a corpse; the face was pale and cold, as well as the hands; the pulse scarcely perceptible; speech unintelligible; the blood flowed in so great abundance that the umbilical cord could not be seen hanging from the vagina. The hand was immediately introduced into the womb, and as the aorta beat forcibly, (a fatal sign in hemorrhage,) the reporter compressed strongly this artery against the vertebral column; the blood ceased instantly to flow; at the same time, the midwife threw injections into the vagina, of vinegar and water, and the patient took occasionally a spoonful of the following mixture:

Recipe. Water acidulated with hydrochloric acid. oz. j.
Tincture of catechu.
Tincture of digitalis, $\overline{a.a}$ oz. ij.

At the end of a quarter of an hour, it was attempted to detach the placenta, which proved a tedious process, because, at first, the blood flowed as soon as compression was removed; then, because the patient felt severe pains, and the uterus beginning to contrast, rendered the operation difficult. The separation was finally effected, and the hemorrhage successfully arrested. The patient so far recovered as to be able to nurse her child.—*Journal de Siebold.*

A similar case occurred in the hospital of St. Louis. After vain efforts to detach the placenta, the aorta was compressed externally above the umbilicus, and thirty grains of spurred rye were given to the patient. The cessation of the hemorrhage was not as prompt as in the preceding case; but, instead of flowing in a full current, the blood now formed a thread-like stream. The action of the spurred rye was felt at the end of twenty minutes after the placenta was expelled, and the hemorrhage ceased. It was time, for the patient was dying. She left the hospital at the end of fifteen days. It belongs to experience to decide between the two modes of compression; the one, external, through the abdominal walls; the other, internally, of the uterus, and through its posterior parietes. However, we may, a priori, and according to the anatomical relation of the parts, decide in favor of the first method. At the first trial, it may appear difficult to reach the aorta through the abdominal walls; this is, however, not the case. After the accouchment, the two anterior recti muscles of the abdomen are separated several inches; the muscles themselves are attenuated and spread out, so that the abdominal wall is formed along the whole length of the linea alba, only by the skin, the aponeurosis, and the peritoneum; the compression is made very exactly, and with the greatest facility. Whilst this compression is being executed, the vagina remains free, and we may, if desirable, cause the hand of an assistant to be introduced for the purpose of detaching the placenta, or to make injections, &c. Through the uterus, the operation is difficult, because the hand is compressed and cannot be placed in the most convenient position to act efficaciously. Instead of compressing the aorta perpendicularly, the hand is obliged to act under the disadvantage of a horizontal position, which is very fatiguing.—*Revue Med., Feb.* 1833. —*Ib.*

13. *Physiological Effects of various Gases upon the Animal System.*—In our fourth volume, p. 479, we noticed the experiments of Mr. Broughton on the physiological effects of oxygen gas upon the animal system. Mr. B. has since instituted some comparative experiments with various other gases; and the following are the results, as communicated to the British Association for the Advancement of Science, at their second meeting. In nitrous oxide, excitement followed by debility, bright redness of the interior of the body, long-continued action of the heart and intestinal canal after sensibility has ceased, and generally effects very similar to those produced in oxygen, took place in a much shorter space of time. Young rabbits are affected in little more than a minute, sparrows in four or five minutes; cold-blooded animals remain a long time unaffected, but ultimately die; a kitten left in the gas half an hour was past recovery.

With regard to other gases the author states his experience to be at variance with a prevailing notion that they are all incapable of entering the lungs, from a closing of the epiglottis simultaneously with the first-drawn inspiration. About thirty seconds of time are sufficient to manifest the effects of chlorine when the animal falls down insensible. If immediately opened, the heart is found palpitating, and the peristaltic movements going on. This gas is traced into the lungs both by their deep yellow tinge and acquired odour, and the brain likewise smells strongly of it.

Sulphureted hydrogen destroyed sensibility in about half a minute, and in two minutes and a half the heart still palpitated. The lungs and brain exhibited a dark brown tint, and smelt strongly of the gas.

In the other gases, animals do not remain unaffected so long as a minute, and contractility is not preserved, as in experiments with oxygen and nitrous oxide, although the period of its surviving sensibility and the motion of the diaphragm may vary a little. All the gases experimented on probably passed into the lungs, with the exception, perhaps, of the carbonic acid gas, immersion in which is borne without any very sensible effects during nearly three minutes, when the animal struggles, and falls down insensible, the blood appearing very dark-coloured, and the heart still and flaccid. From these results, the author extends his deduction of the poisonous character of oxygen in excess to the other gases which enter the lungs, and remarks on the specific analogy which obtains between the effects of nitrous oxide and fermented liquors.—*Second Report of the British Association for the Advancement of Science.—Am. Journ. Med. Sciences.*

13. *Professor Weber's Experiments on the Sensibility of the Skin.*—The Edinburgh Medical and Surgical Journal, for July last, contains an interesting account by Dr. Allen Thomson, of these experiments. It is a fact well known to physiologists, as Dr. Thomson observes, that there is a considerable difficulty in pointing out with certainty, when unaided by sight, any spot on the skin that has been touched, and in distinguishing how much of the common feelings of touch is due to the sensibility of the skin, and how much is derived from the muscular sensation produced by the motion of our limbs. It

is also well ascertained that some parts of the skin are better adapted than others, either from their original structure, or in consequence of their being more exercised, to convey to the mind an exact impression of the physical qualities of the bodies with which they are brought in contact. It must be allowed, however, that our knowledge respecting this part of the physiology of the sense of touch is by no means definite.

Professor Weber of Leipsig has lately performed a very simple and ingenious set of experiments which illustrate the subject of the sense of touch, and furnish us with a mode of measuring with considerable accuracy, the relative acuteness of this sense in different parts of the skin of the same or of different individuals.

These experiments consist in placing the two points of a pair of compasses at different distances from one another, and in various directions, upon different parts of the skin of an individual who is not permitted to see the bodies touching him.* Professor Weber thus found, that, according to the distance of the two points from one another, we may have the feeling either of one only or of two tangent points, and that the distance at which we become sensible of the double impression as in the inverse proportion to the acuteness of the sense of touch in the skin; or, in other words, that we recognise a double impression made on very sensible parts of the skin, although the points are situated very near one another, while in those parts of the skin in which the sense of touch is obtuse, the points may be removed to a considerable distance from one another, and yet convey to us the feeling of only one impression.

Professor Weber has embodied the principal results of his experiments on the varieties in the acuteness of the sense of touch of different parts of the skin in eight propositions, of which the following is an abstract.

Prop. 1. The different parts of the skin or organ of touch do not possess an equal power of distinguishing two bodies by which they are touched at the same time. The distance of the two touching bodies being known, the degree of this power may be measured; for it is ascertained that if the organ of touch does not perceive the contact of two bodies when they are near one another, it becomes sensible to the impressions of both when the distance between them is increased.

If the touching points are sufficiently distant, we not only distinguish the impressions of both, but also the direction, longitudinal or transverse in relation to the body, in which they are applied to the skin. When they are brought nearer to one another they first give the sensation of the contact of a long body, but when brought still closer together, they appear as a single point upon the skin.

The ends of the fingers and the tip of the tongue have the power of distinguishing the distance of two points nearly equal, and in a much greater degree than any other part of the body. At two-fifths of a Paris line we are capable of distinguishing the longitudinal from the

*The sharp points of the common compasses may be blunted with a little sealing wax, which will have the effect also of taking away the cold feeling of the metal.

transverse position of the points on the tip of the tongue. At half a line two impressions are felt, more especially when the points are made to touch at the same time the upper and lower margins of the tongue, or the dorsal and palmar sides of the fingers; but in most other parts of the body this is different; for

Prop. 2. In many parts of our bodies we perceive the distance and situation of two points touching us at the same time more distinctly when they are placed parallel to the transverse than to the longitudinal direction of the body.

This may easily be tried in the middle of the arm or forearm: here the two points may be distinguished at a distance of two inches when placed in a direction across the arm, but they appear as one at this distance, or even (in some persons) at three inches when placed longitudinally.

Prop. 3. In those parts of our body in which the impressions of both points are clearly distinguished, although not distant, the space between these points appears to be greater than in other parts possessing a less sensible touch.

The experiments illustrative of this are very striking. They may be best performed by drawing both the points of the compasses gently along the skin, from a sensible to a less sensible part, or *vice versa;* as from the hand along the fingers, from the cheeks or ear across the lips, and towards the nose; from the jaw to the chin, from the occiput to the sacrum, with a point on each side of the median line, and from the chin to the pubis, in the same manner. In passing over the more acutely sensible parts, the points of the compasses seem to open or to recede from one another, and the reverse takes place in those regions in which the sensibility is obtuse.

Prop. 4. If the points are placed on two contiguous parts which may be moved voluntarily and independently of one another, the double impression is much more clearly perceived, and the points appear more remote from one another, than if at the same distance, they were brought in contact with one entire part. This is easily shown on the lips, fingers, and eyelids.

Prop. 5. We distinguish the two points more clearly, if they are brought into contact with two surfaces having a different structure and use, than when they are applied to one and the same surface.

This rule also holds in respect to surfaces possessing different degrees of sensibility; for in this case also, the points are more clearly distinguished when they touch two contiguous surfaces of different powers, than when they are both placed on the most sensible of them. This may be seen on the lips, by placing one point on the internal, and another on the external surface, in which position the points are distinguished at a smaller distance than in any other, although the surface of the lips directed towards the gums has a much less acute sense of touch than the red part. The same is the case with the white and red external surface of the lips.

To the same general rule may be referred another fact, viz., that a smaller distance of the points is perceptible when they touch at once the palmar and the dorsal surfaces of the fingers, than when they are

both applied to one of these surfaces; and it may also be stated, under this head, that this power of distinguishing the points is generally greater when they are applied at equal distances on each side of a median line of the body.

Prop. 6. If we examine attentively the degree of acuteness of the touch in each part of the body, we shall find that this varies not only in the larger parts, but that there are also small spaces, in some of which the sense is more acute, in others in the immediate neighborhood, more obtuse. These points, however, do not vary to a great extent in the degree of their acuteness, nor has Professor Weber discovered any fixed order according to which they are disposed.

This observation would seem to show that the nervous fibriles are not quite equally distributed throughout the skin.

Prop. 7. If we are touched with greater force by one of the points than by the other, the impressions of both are distinguished less easily; for the stronger obscures the weaker.

Prop. 8. We distinguish two separate impressions more easily when they are not made exactly at the same time; and on this account, in performing all the experiments previously referred to, it is necessary to pay great attention in order to make the contact of both points synchronous.

The cause of the diversity in the sense of touch in different parts of the body is as yet unexplained. It is sufficiently obvious that the greater sensibility of some parts of the body does not depend on their being more frequently seen than others, as some have supposed to be the case; the middle of the back of the hand, consequently exposed to view, is surpassed by the fingers and palm, and even by the lower end of the fore-arm; the same is the case with the dorsum of the foot. The skin over the os sacrum and coccyx, though beyond the range of vision, is comparatively very sensible. The sensibility of the submental surpasses that of the sternal and abdominal regions; and, though the anterior is generally more sensible than the posterior surface of the body, this would appear to be connected with the structure of the skin rather than with the sight, for the sacrum and coccyx are more sensible than the pubis. Examples of blind persons also, and the great improvement their organs of touch are susceptible of from exercise, sufficiently show that sight has very little to do with our power of distinguishing by touch different regions of the kin. Nor does this power appear to depend chiefly on any mechanical advantage of one part over another, as, for example, that some parts are fixed on bones, and others very moveable. The tip of the tongue and free part of the lips which are loose, and the points of the fingers which are fixed, are possessed of nearly equally acute powers of touch.

The cause of these variations is probably to be sought for in the structure of the skin, with which subject we are as yet, as regards the distribution of the nerves at least very imperfectly acquainted. It seems to be obvious, however, that the great power of touch does not depend on the presence of papillæ, for the mammæ and some other parts with numerous papillæ have yet a very blunt sense of touch.

The tongue has papillæ over its whole upper surface; but it is only at the tip that the sense of touch is very acute.

Many experiments show that the direction of the course of the larger and smaller nervous twigs has some influence over the power of the skin, by which we distinguish the separate impressions of the points. The greater power which we have of distinguishing the points in a transverse than in a longitudinal position on the arms and legs, while on the face and some parts of the trunk of the body a position of the points parallel to the longitudinal direction of the body gives the clearest double impression, would seem to show that in general the feeling of the distance of the points is most acute, when they are applied across the direction of the nerves in their course. There are, however, other varieties which cannot be so easily explained in this manner, and it becomes necessary to have recourse to the supposition, that the quantity of nervous matter, as well as the mode of its distribution in the skin, may influence to a considerable extent the acuteness of the sense of touch. Sufficient attention has not as yet been given to this part of the subject.

The effect of motion of our organs, and of the bodies touching them, in augmenting the acuteness of the sensation, is very remarkable. When two points, for example, placed upon the skin appear as one, we can often recognise their double impression by moving the skin. It is thus that by moving the fingers we discover the asperities on surfaces which could not be felt, were the finger held at rest over them. We also acquire a more acute knowledge of the nature of an impression, by having it made on different parts of the skin in succession. By a peculiar internal feeling, called the muscular sensation, informing us of the extent of muscular contraction, we come to know the direction and space in which our limbs are moved; and every one knows that this feeling is of very considerable importance in aiding the sense of touch, and in improving that kind of touch frequently distinguished in this country by the term tact. It has already been remarked, that it is not unfrequently difficult to discriminate whether we judge of the qualities of a surface by the sensibility of the skin, or by the muscular sensation. We can in general tell immediately the direction in which any one pulls the hair of our head; but the knowledge of this direction is not derived, as might be supposed, from the sense of touch, but depends on an exertion of the muscles of the head, which is immediately and insensibly made with the view of resisting the motion of the head, which without it would occur. On fixing the whole head, it will be found that the power of distinguishing the direction still remains, though in a less degree. This seems to depend on the position of the skin in the neighborhood being altered by traction, for when we fix the skin the power of distinguishing the direction in which the hair is pulled entirely disappears.

Another illustration of this is obtained from the following experiment. Shut the eyes, hold the hand steady, and let some one touch your fingers with, and carry along their points various substances, as paper, glass, metal, wood, quill, leather, linen, silk, or velvet; you will be surprised how often you mistake the one for the other, according as

they are more or less lightly pressed against the fingers. Metals when of the same temperature as the hand can scarcely be distinguished from glass and other substances with a smooth surface. When the finger of one person is conducted by another into a fluid, the slight pressure over a considerable surface informs him of its presence. If a person draws a plane surface along the finger of another, pressing at first gently, then gradually more strongly, and again gently, the feeling of a convex surface will be communicated to the finger, and that of a concave surface may be given by the greatest pressure being made at each end.

Professor Weber has also instituted some experiments for the purpose of ascertaining how far we are capable of judging of the weight of bodies by the sense of touch in the skin, and how far it is necessary that we should be assisted also by the muscular sensation; for it is obvious that in general we make use of both these means to obtain a correct estimate of weight. He found that when two equal weights* are placed on corresponding parts of the skin, he might add to or subtract from one of them a certain quantity without the person on whose skin they were laid being sensible of any change or inequality in them. He ascertained that when the hand or any other movable part of the body is laid quite inactive on a table, a much greater change can be made in the relative weight of the two bodies, without its being perceived, than when the limbs are free and capable of muscular exertion: that thirty-two ounces or drachms, for example, may be altered by from eight to twelve, when the hand is motionless and supported, but only by from one and a half to four, when the muscles are in action; and hence Professor Weber infers, that the measure of weight by the touch of the skin alone is more than doubled by the assistance of the muscular sensation.

By these experiments it was found that the lips estimate weight more correctly than any other part of the body: the fingers and toes may be reckoned next, the second phalanx being inferior to the third, and the first to the second: the palm of the hand and sole of the foot, especially the parts covering the ends of the metacarpal and metatarsal bones, possess also a considerable power, while the back, thorax, abdomen, scapulæ, arms, legs and occiput have very little power of estimating weight; which observations obviously show a considerable correspondence between those parts of the skin possessing the most acute sense of touch, and those estimating weights most correctly.—*Arch. Gen. from Rust's Mag.—Am. Journ. Med. Sciences.*

15. *Berzelius on the Chemical Constitution of Urine in Various Diseases.*—During the first period of fevers, the cutaneous transpiration being obstructed, the urine becomes more aqueous than in its healthy state: when the heat of the body increases, with acceleration

*The weights employed ought to be made of the same material, and must present the same size and form of surface to the skin. In order to insure this, and to correct the difference of temperature, it is well to interpose similarly shaped pieces of pasteboard between the weights and the skin.

of pulse, the urine becomes deeper colored, without, however, letting fall a deposit, while its acid reaction diminishes, and at last nearly or entirely disappears; it is then rendered turbid by the addition of bichloride of mercury, which does not happen when the acid is present. As the disease advances the urine becomes more saturated, and is then rendered turbid by a solution of alum. When albumen is secreted more copiously, it is troubled by nitric acid and heat. When the fever ceases, as, for instance, on the seventh day, the free acid suddenly reappears, the colour of the urine deepens, and it forms a deposit by cooling. This deposit is not an evacuation of morbific matter, but is merely a combination of red colouring matter, with uric acid or urate of ammonia, and perhaps nitric acid, in an unknown state of combination. In intermittent fever the urine presents these phenomena at each paroxysm, and then the deposit assumes a carmine tint. During slow nervous fever, there is constantly formed an abundant deposit of uric acid, containing little colouring matter; the urine then contains an excess of the phosphates and a deficiency of urea, the other ingredients being in their normal proportion.

In anasarca, which is generally the result of debility of the whole system, serum is effused into the urinary passages; hence the urine appears albuminous, and is troubled by bichloride of mercury, although much free acid may be present. After a short time, the kidneys appear to secrete an albuminous fluid, which occasions the urine to be precipitated by a solution of alum, nitric acid, or heat. As the albumen increases in quantity, the urea diminishes, and finally disappears altogether. These phenomona likewise appear in chronic hepatitis, dyspepsia, and towards the close of pulmonary affections, especially during the last stage of hectic fever.

During severe vomiting, whether from scirrhus of the stomach or other causes, the urine is frequently turbid, and has a milky aspect, letting fall a white deposit, which, when collected, appears mucilaginous, and by desiccation becoming first yellow and translucent, then white and pulverulent; by affusion of water it resumes its mucilaginous form; pure potass dissolves out of it mucus, leaving a residue of phosphate of lime. Hydrochloric acid dissolves the latter and renders the mucus transparent, which also dissolves by digestion. This state is generally accompanied with alkaline urine, arising from the presence of the carbonates of soda and ammonia, diminished quantity of uric acid, and an excess of urea. In gout the urine is usually very acid, except during the paroxysms, when it becomes alkaline or neutral; uric acid is always present in considerable excess; the deposit is also abundant by cooling.

In jaundice the urine appears yellow, from an admixture of biliary matter; and on the addition of nitric acid, a play of colours is generally produced. Hydrochloric acid renders it green or brown, according to the state of modification in which the biliary matter exists.

Sometimes orange-yellow flocculi are deposited: these are soluble in caustic potass, and give the usual reaction with nitric acid, in partial hepatic obstructions, when no discoloration of the skin has ap-

peared: the bile, by passing through the lymphatic vessels of the engorged parts, enters the circulation, and may be detected in the urine by evaporating a portion of the latter, digesting the extract in alcohol of specific gravity .833, and letting the tincture evaporate to dryness. The addition of nitric acid will then produce the change of colours—viz. green, blue, violet and yellow—which characterizes the colouring matter of bile. In spasmodic and hysteric affections, the urine often becomes limpid and colourless, being, indeed, merely a solution of the urinary salts, deprived of almost every particle of organic product.

In diabetes mellitus, an immense quantity of sugar is secreted. At the first access of the disease, the only symptoms are copious emission of urine and diminished appetite; the cutaneous transpiration is obstructed, and the urine is supplied with water from all the fluid ingesta. The specific gravity is often as high as 1.050; as the sugar increases the urea diminishes, and at last totally disappears: colour pale yellow, taste sweet, odour like that of skim-milk; the inorganic salts are present in their natural proportion, being merely diluted with a larger quantity of fluid. Towards the close of the disease, when hectic fever makes its appearance, the urine becomes albuminous, and now passes spontaneously into the alcoholic fermentation; the quantity of urine expelled increases to an enormous amount. We may calculate by the following formula the weight of the dry extract in solution in the urine, and of course the quantity daily expelled. A pint of urine, specific gravity 1.020, leaves by evaporation 382.4 grains of dry extract; which weight increases in the proportion of 19.2 grains for each unit of specific gravity, until the latter amounts to 1.050; so that if we have a patient voiding urine of specific gravity 1.021, we can determine the weight of solid matter present in his urine by making this calculation, 382.4+19.2=401.6 grs. in every pint. When diabetic urine is evaporated to dryness, and alcohol digested on the residue, the sugar and extractiform matter are dissolved; this solution, by repose, leaves either granular crystals, like grape sugar, or merely a honey-like mass. We are ignorant whether this difference is owing to a diversity of saccharine matter. or to the presence of a deliquescent matter, which prevents its crystallizing. Sugar has been sought after in vain in the blood of diabetic patients: indeed this disease appears to be seated solely in the kidneys. which convert almost every portion of organic matter arriving in those viscera into sugar. When a favorable change takes place, urea reappears, and a quantity of albumen makes its appearance in the urine.

M. Meisner, who has paid great attention to this subject, gives the following quantitative analysis of three specimens of diabetic urine, taken from the same patient at different periods:—

	1.	2.	3.
Matter soluble in ether, urea lactic acid, lactate lime, extractiform matter -	0.34	0.33	0.65
Matter soluble in alcohol, diabetic sugar, extractive matter and salts - - -	7.06	3.46	5.78
Matter soluble in water; extractive matter and salts - - - - - - - - -	1.37	3.44	0.99
Vesical mucus, subphosphate of lime, and traces of peroxide of iron - - -	0.34	0.31	0.46
Water - - - - - - - - - - - -	91.19	92.46	92.10

In diabetes insipidus no sugar is found, but there is present in the urine a matter similar to that obtained by digesting alcohol on an aqueous extract of muscular fibre: no ultimate analysis of this matter has been as yet made.—*Lond. Med. Gaz.—Ib.*

16. *Observations on Local Blood-Letting, and on some New Methods of practising it*—By Jonathan Osborne, M. D., &c. &c.—Opening the veins of a foot is a practice still resorted to in cases of obstructed menstruation by practitioners who must be above the influence of vulgar prejudice on the subject. The trials which I have made have not enabled me to arrive at a conclusion as to the question whether this practice possesses any advantage above general bloodletting. Bleeding from the veins of the tongue is another old practice now nearly forgotten, having been superseded by the more manageable mode of taking blood by leeches. By opening the veins on the back of the hands we can usually obtain blood with great facility when particular circumstances forbid bleeding in the arm. Bleeding from the jugular vein is not well suited for taking blood from the head, because the external jugular, which alone is within our reach, is supplied from the superficial veins of the neck, and principally from those of the larynx, but not from the interior of the head. Great benfit, however, may be derived from opening it in sudden attacks of croup.

The application of leeches is frequently a cause of great fatigue to the patient, from the length of time during which stuping with hot water is kept up in order to promote the hæmorrhage from the leech bites; and, in some cases, when this operation is continued under the bed-clothes, the damp communicated to these produces cold, and is uncomfortable to that degree as often to prohibit their use. All this is obviated by the application of warm cloths of linen or calico applied perfectly dry, and removed in succession according as they have become saturated. By these means the blood is absorbed by capillary attraction, a process which cannot take place with wet applications. When dry cloths are thus applied and renewed to cuts in the skin, or to leech bites, I have found the bleeding uniformly to continue as long as the application was kept up, it being required only to supply fresh portions of the dry cloth to insure the continuance of capillary attraction, and thus to prevent coagulation at the mouths of the vessels.

This mode of managing leeches I am thus particular in describing, as it has enabled me to apply them in a case in which if wet cloths were used, very serious danger might arise. I allude to bronchitis, both acute and chronic, in which the application of leeches to the larynx and to the trachea in the triangular space between the mastoid muscles, has appeared to me to be the most decisive and immediately successful remedy of all those which I have ever employed. In laryngitis, their utility is obvious and commonly recognized, but in bronchitis it has escaped notice that the most immediate depletory process which can be performed on the mucous membrane on the bronchial tubes is that of leeching the trachea and larynx. It appears to remove blood not only from the mucous membrane of that part of the bronchial tube to which the application is made, but also from the whole tract of the bronchial tubes throughout their ramifications, being nearly equally efficacious in putting an end to the cough, when the remoter tubes are affected, as when the larynx is the chief seat of disease. This application is also of singular efficacy in stopping the cough of phthisis, insomuch, that by resorting to it according as required in cases in the hospital, we have been enabled to secure sleep at night, and during the day to keep the phthisical patients so free from cough, that a superficial observer might readily believe that we had cured the disease.

It has been ascertained that leeches will continue to live and to draw blood although immersed in water at a temperature considerably above 100 deg. Now, in cases of violent inflammation of the abdominal viscera, when local abstraction of blood and warm fomentations are both at the same time imperatively demanded, as soon as leeches have been applied to the abdomen the patient may immediately be placed in a hip bath without waiting for them to fall off. Thus we may cause the relaxation and diminution of sensibility produced by the heat to combine with the benefit to be derived from the topical loss of blood.

The application of leeches to mucous surfaces was, I believe, first described by the surgeon-general, Mr. Crampton. Although I have not met with any case of cynanche which required the direct application of leeches as advised by him, yet there can be no doubt as to the immediate benefit to be derived from it. I have resorted to the mode of applying leeches to other mucous membranes by passing a needle and thread through their tails, at about one-fourth of an inch from the extremity. This practice, so far from incapacitating them from action, causes them to bite with increased ardor, and, in fact, may be used to stimulate torpid leeches. The thread to be passed through the tail of the leech should be strong, and its extremities are to be held by the operator, while, if necessary, he may direct the mouth of the leech by a probe or channel made with a card, to the place where its services are required.

In certain headaches confined to the frontal sinus, which, although originally derived from derangements of the digestive organs, yet do not cease when those derangements have been removed, a prompt relief is obtained from applying leeches in this manner to the interior of

the nostrils; and in those cases no benefit is usually derived from leeches externally applied. The bleeding is usually rather more copious than if the application had been made on the skin; if, however, it should be deficient, the patient may encourage it by breathing over the vapor of hot water.

In inflammations of the conjunctiva, a leech thus applied to the Schneiderian membrane of the adjacent nostril evidently unloads the vessels of the eye. This application I have found of great use after the previous application of leeches to the tarsal conjunctiva. It appeared to render the improvement derived from the latter permanent, and prevented the necessity of repeating it.

In inflammations of the ear, this mode of applying a leech inside the meatus is eminently useful; and next to it in importance is the application of them behind the ear as near as may be to the meatus. It may be objected, that such applications are not well suited to inflammations of the internal parts of the ear, inasmuch as those are supplied by a different set of vessels from the external. But the effect of leeches is independent of vascular connection. For example:—in inflammations of the stomach or intestinal canal, the benefit derived from leeches applied to the corresponding region of the abdomen is acknowledged by all; but the vascular connection between those parts is as remote as that between distant regions of the body, the one being supplied from the arteries arising from the abdominal aorta, and the other from the epigastric and mammary arteries; and that there can be no anastomosis of vessels is evident from the interposition of the peritoneum, which insulates the viscera completely from the anterior parietes of the abdomen. The same observation applies with the same force to the thoracic viscera and to the brain. In all those cases, however, the effect of local bleedings is proved so repeatedly in our daily experience, that the inability of satisfactorily explaining the way in which the effect is produced must not be allowed for one moment to press against the evidence of facts.

In inflammation of the mucous membranes of the bowels, especially of the rectum, the French practitioners apply leeches to the margin of the anus. If the leeches take externally, no benefit is derived; and to apply them internally is often difficult, on account of the violent contractions of the sphincter. Those contractions also prevent any considerable quantity of blood being obtained from the bites. I have employed a method of taking blood from the rectum which obviates these inconveniences.—*Dublin Journ.—Boston Journal.*

17. *On the Oil of the Croton Tiglium as a Purgative for Children.*—By Edward Augustus Cory.—It is a matter of the greatest importance, in the treatment of the diseases of children, that the remedial agents employed should be palatable to the patient. A disease is frequently aggravated considerably by the forcible administration of nauseous medicine, especially where the head and chest are affected; indeed, this remark will apply to the generality of inflammatory affections. It is well known, that the active principle of the cathartics, usually administered to children, is calomel, it being the least unpleas-

ant to the taste; but this remedy I am convinced, from multiplied experience, does not completely answer the required end, unless it be given in combination with other aperients, as jalap, rhubarb, &c. &c., which render it extremely disagreeable to the little patient. One of the most pleasant and efficient purgatives for children, with which I am acquainted, is the ol. croton., prescribed according to the following formula:—

R. Olei crotonis, gtt. ij.
Sacch. albi, ʒ ij.
Pulv. acaciæ, ʒ ss.
Tinct. card. co., ʒ ss.
Aq. q. s. ft. mist., ʒ ss.

Of this a child, five or six years old, may take two or three teaspoonsful every three or four hours, until the bowels have been freely acted upon. I have been for some time in the daily habit of using this preparation in the treatment of the diseases of children, where a complete and speedy evacuation of the bowels is required. I have found it of admirable service as a purgative in cephalic and thoracic affections; it acts with great celerity and occasionally produces a gentle vomiting, which is often salutary. I do not recollect one single instance where its action has been violent and dangerous, when given according to the formula directed. I strongly recommend its general use, and I feel confident that it will become a favorite medicine in all the morbid affections of children, where a quick, certain, active, and pleasant purgative is indicated. It may be proper to remark, that the croton oil I prescribe is procured from, and, I believe, prepared by, Messrs. Drew, Heyward, and Baiss, wholesale druggists, Great Trinity lane, Bread street. It appears to be of excellent quality.—*Lond. Med. and Surg. Journ.—Ib.*

18. *Indian Ophthalmia treated with much success with Alum.*—M. Sonty, in a report which he lately made to the Minister of the French Marine, mentions his great success in the treatment of a most violent and rapidly destructive epidemic—purulent ophthalmia, in the East Indies. At first he had employed antiphlogistic measures, but they entirely failed, or rather the disease was too intense to be quickly enough affected by them. The natives employed very stimulating applications; as, for example, a mixture of pepper, lemon-juice, and the juice of tamarind leaves, to which is added afterwards, roasted walnuts; this paste they applied round the eyelids. M. Sonty soon found out the marvellously good effects of rock alum. He took a piece, with which he kept stirring, for eight or ten minutes, the white of an egg, which is then to be put into a white muslin bag. When this is to be used the patient's head must be held back, and while the eyelids are kept open, a few drops of the liquid are to be squeezed from the bag upon the eye. This operation must be repeated very frequently—in some cases every half hour. The same treatment is applicable in all the stages of the disease, and generally cures it in from 24 to 48 hours.—*Archives Generales.—Ib.*

II. ANALYTICAL.

ART. I. *Removal of the Clavicle in a state of Osteo-Sarcoma.*—The distinguished professor of Anatomy and Surgery in Harvard University, Dr. Warren, has lately performed this operation. The patient, a man twenty-four years old, apparently in consequence of lifting a heavy weight, experienced, after several months, an osteo-sarcoma of the right clavicle.

The following is the professor's account of the operation, as published in the American Journal for November:

"The patient being placed on a table, the shoulders elevated, an incision was made from the acromial extremity of the clavicle to the sternal extremity of the clavicle of the opposite side. This was crossed by an incision at right angles with it, beginning just below the middle of the sterno-mastoid muscle, and extending to the face of the pectoralis muscle below the middle of the clavicle. The four flaps were then dissected from the surface of the tumour. Next the outer extremity of the clavicle was laid bare, by dissecting the deltoid muscle from its anterior edge, and the trapezius from its posterior edge, and the division of the coraco-clavicular ligaments. An eyed probe, armed with a ligature, was then passed under the clavicle, and the ligature being attached to a chain saw, this was drawn under, and the clavicle sawed through.

The separation of the tumour now began.

A strong ligature being passed around the outer extremity of the divided clavicle, the tumour was partially moved by it, so as to give tension to the surrounding soft parts. The pectoralis major muscle was cut through, and dissected from the lower edge of the tumour, and drawn so as to expose the pectoralis minor and the cephalic vein. Now the dissection extending under the tumour, the subclavian muscle was distinguished and dissected from the tumour at its outer part, but at the sternal part it was lost in the tumour, where of course the dissection proceeded over the surface of the subclavian vein. An adhesion of the tumour to the second rib, in which it was imbedded, prevented a perfect separation at this part till the close of the operation.

The next step was to divide the attachments to the upper or cervical edge of the tumour. First the posterior external jugular vein was divided and tied: it was filled with a dense lymph, and discharged no blood. Next the sterno-mastoid muscle was cut across, and the sheath of the cerebral blood-vessels exposed. The internal jugular vein was perceived to pass from the neck into the substance of the tumour in such way as to render it difficult to dissect without dividing it. This was however accomplished, and then the carotid artery and par

vagum nerve presented themselves. On reaching the internal extremity of the tumour, the anterior external jugular vein was found imbedded in it. This was filled with solid lymph, and was tied, as it would not have been safe to have left it without a ligature.

Nothing now remained to be done, but to separate the sternal end of the tumour from the corresponding part of the jugular and subclavian veins. By great caution this was safely accomplished, and the tumour removed. When this was effected, the whole extent of the subclavian vein was exposed—the lower part of the jugular vein and the par vagum nerve. These being put in motion by the pulsation of the subclavian and the carotid arteries, and the arteria innominata, presented a formidable appearance.

Little blood was lost in the operation. Only one or two arteries were tied, and the veins specified above. The flaps were brought over and retained by three sutures and adhesive plasters, so as to cover the wound perfectly.

The patient's appearance after the operation was good, and by a recurrence to the Surgical Diary, it appears his symptoms were most favorable to the thirteenth day. He was then able to sit up; had appetite; took small quantities of solid food, and had every promise of a favorable termination of his case.

The wound united to a considerable extent by the first intention, and the united part went on favorably. On the thirteenth day he was affected with chills, pain in the epigastric region, and his pulse rose from 80 to 112. These symptoms were followed by a nervous agitated state, and eventually by a slight delirium, with no other local phenomena than these above-mentioned.

On some days he appeared better, and in a fair way to recover, and this hope was not abandoned till the day before his death, which occurred on the 8th day of December, in the fourth week from the operation."

The patient was of an irritable and scrophulous habit; and to this the professor ascribes the fatal termination of the case.

ART. II. *Injurious administration of the Sulphate of Quinine.*—In the Journal just quoted, our friend Dr. Monett, of Washington, Mississippi, has published an interesting paper on the uses and abuses of this medicine, which he ranks with digitalis and tartarized antimony, denying to it a tonic power. We have more than once in *this* Journal, asserted its claims to the character of a narcotic sedative, and denied to it the character which belongs to the Bark, from which it is prepared. The following extract may be read with advantage by those who regard it as a tonic and stimulant.

"The *bark* having been used in all cases of remittent and intermittent fevers indiscriminately, must necessarily have failed to cure those cases in which its use was improper. The same result will obtain from a similar use of quinine. The *bark is improper and pernicious* in all cases characterized by general increased arterial tone and action; or in fevers consequent upon local inflammation or engorgement, and where the tone of the system is unimpaired. If administered in such cases it will certainly disappoint expectation. The best Peruvian bark possesses a tonic and a febrifuge property combined. This combination of properties adapts it peculiarly to cases of fevers and febrile affections based upon an *asthenic diathesis.* This circumstance, in all cases, should form the criterion for its use, whatever be the name of the disease or its external character. The same property which adapts the bark to this class of diseases, renders it in the same degree pernicious in those of an opposite character.

The *quinine* is salutary and proper, as a remedial agent, in cases the reverse of those in which the bark is applicable. The quinine, which has been erroneously supposed to contain the whole tonic property of the bark, is in fact its *febrifuge* essence uncombined and *without any tonic property whatever.* Thus, when quinine is improperly given, its pernicious effects are much more aggravated than those resulting from an improper use of the bark. For in the latter the febrifuge in some degree counteracts the tonic property, and *vice versa:* besides, the improper cases for bark, are those states in which the system is unimpaired by debility, and can withstand a temporary error without serious injury. On the other hand, the quinine exerts its febrifuge powers *by directly diminishing the force* and tone of the arterial system, and is injurious only in those cases where the asthenic diathesis prevails. In such cases, with an impaired state of the constitutional powers, atony in the circulating system, and all the train of rapid and fatal symptoms attendant upon adynamic fevers, even a temporary diminution of the powers of life cannot be sustained without the most imminent hazard. When used in these cases, quinine, unlike digitalis, tart. ant., &c., instead of diminishing the force and frequency of the arterial pulsations, diminishes their force, but *increases their frequency,* together with all the signs of irritable debility. This is what M. Bally means by its irritating property; and this is what others have *erroneously considered its stimulant effects.* For while quinine acts as a febrifuge and contra-stimulant in sthenic diseases, it produces the highest grade of irritable excitement in those of direct debility.

But in cases of open excitement, in vigorous constitutions, the quinine may be used advantageously in most of those cases of autumnal remittents and intermittents, in which tartarized antimony, digitalis, pulv. ipecac. c., saline diaphoretics, and medicines of that class might be safely employed. In such cases the system will not unfrequently bear large doses of quinine without any visible effect; as is likewise often the case with tart. ant. and other medicines. *But it cannot be otherwise than pernicious in all asthenic cases;* and I consider highly preposterous an attempt to make it supercede many of our valuable remedies in the treatment of summer and autumnal fevers, especially

in this climate and latitude, where most of our summer and autumnal diseases originate in the debilitating and relaxing effects of heat.

It is truly a matter of astonishment, that this article should have been forced so extensively into the southern practice, where diseases, especially summer and autumnal fevers, are least adapted to its use. Yet such is the force of habit and preconceived notions in medicine, as in every thing else, that too often they usurp the province of judgment and discrimination; and medicines are often administered in certain cases, only because we have been in the habit of prescribing them in others. And thus it is with calomel and quinine. I doubt whether mercury itself, in so short a period, has ever produced more pernicious effects than quinine. The effects of the former are known and visible to all; it is therefore given with caution. The latter, under the misguided notion of its tonic and stimulant properties, is administered in the most improper cases; while all its pernicious effects are reckoned only so many symptoms of a disease, which it is most unquestionably to cure. The more alarming these symptoms are, the more the pernicious article is pressed upon the patient, aggravating every alarming symptom, until the unfortunate victim is pressed into the grave; the price of being cured *secundum artem* by quinine! I have often been called to see patients whose case was considered hopeless, where the disease was protracted into that state solely by the use of quinine, and where the only important indication towards effecting a cure was the discontinuance of *the medicine*. I have seen physicians use the sul. quinæ, without any fixed rule, or any definite views relative to its *modus operandi*, in all cases and in all stages and varieties of fever indiscriminately, like a charm or enchanted dose, which is to adapt itself to every peculiarity of case, and to effect wonders they know not how. Even in this manner it cannot always fail. Some cases will happen to be proper, and the effects favorable. This will cause it to be given again in twenty improper cases. So egregiously are its pernicious effects overlooked or misconceived, that not unfrequently the most decided evidence of its pernicious effects, such as tinnitus aurium, deafness, vertigo, strabismus, cephalalgia, nausea, and vomiting, are construed into criteria for its administration, and as indicative of its salutary effects. Effects these, which I do not hesitate to denounce, as certain indications of its improper use, either as relates to the case, or the quantity administered.

The sulphate of quinine, I repeat, *is a valuable febrifuge and counter-stimulant, and is not in any sense a tonic.* Yet its febrifuge effects may be obtained without injury from its counter-stimulant properties, even in slight cases of asthenic fever, or its action may be so modified by a judicious combination of aromatic stimulants and opiates, that in cases of moderate asthenia, no detriment will be sustained from its contra-stimulant properties. In this respect it bears a strong reverse analogy with camphor. The quinine being contra-stimulant, requires its action to be guarded by capsicum, camphor, and opium. Camphor, on the other hand, being stimulant, requires the addition of antimonials and other contra-stimulant diaphoretics, to adapt it to cases in which it would otherwise be inadmissible. However, *quinine should not be*

used in any manner in simple debility unattended with fever. The danger lies in administering quinine in cases attended with a cool, relaxed skin, and general diminution of tone and action. There must be febrile action, or quinine is injurious under any combination.

It may be laid down as a general rule, to which there will be but few exceptions, that the sul. quinæ, as a remedy, is admissible only in persons of strong athletic habits, of sanguineous or bilious temperaments, and whose systems are not debilitated by previous protracted disease, and in those who are temperate and free from any constitutional irritability. Diseases supervening upon such constitutions and habits, will be mostly those of direct excitement, and which may in some stage be treated with quinine. The quinine, however, is contra-indicated in all individuals of lax fibre, and feeble circulation; in leucophlegmatic and nervous temperaments,* attended with torpor in the absorbent system, and with adipose depositions. In these constitutions and habits, diseases usually in this latitude assume the asthenic character, especially summer and autumnal fevers, and constitutional derangements consequent upon them.

It may not be superfluous to be more particular in specifying those diseases in which *the sulphate of quinine is pernicious.* They are chronic debility from whatever cause; want of tone in the ultimate fibre, with defective energy, mental and corporeal; disorders consecutive of weak or irregular, defective or increased action in the abdominal viscera. The external evidences of such cases are pale skin, sallow complexion; feeble and quick pulse, or weak and sluggish; pale or ash-coloured tongue, not furred; clear white sclerotica; mental lethargy, and aversion to bodily exertion; irregular biliary discharges, sometimes deficient, often profuse, thin and yellow: in extreme cases of irritable debility, there is a tendency to syncope in a sitting or erect posture, throbbing in the head, tinnitus aurium, palpitation and vertigo. Quinine aggravates every one of these symptoms. It is improper in violent congestive fever, with cerebral congestion, and in the collapsed stage of common remittent, malignant, and typhus fevers. In any and all cases of these, quinine, as it is generally administered, *never fails even in small doses, to induce a quicker and more irritable pulse, thirst, and cerebral congestion,* and a train of unfavorable symptoms. These, which are aggravated by each dose of quinine, are readily relieved by wine or toddy, aromatic cordials, camphor, ammonia, and opiates.

Another disease, whose course has been most terrific in our own country, as well as elsewhere, is rapidly hurried on in its fatal termination by quinine. Those who have contracted a partiality for this article, have naturally enough conceived it peculiarly adapted to the cure of *malignant cholera,* (cholera asphyxia.) The *cholera* has uniformly exhibited the character and symptoms of a most malignant collapsed fever, and has always, in my opinion, required a liberal exhibition of

*M. Bland, in the summer of 1825, observed deafness and other symptoms of cerebral congestion, &c., produced by large doses of quinine. This he observed chiefly in persons of *tall and slender make, and of nervous temperaments.*—*Am. Journ. Med. Sciences, No. II.*

aromatic stimulants, camphor, æther, and calomel. The most successful have been calomel, opium, camphor, and capsicum. If these articles be beneficial, in their operation, and if quinine be a contra-stimulus, as it undoubtedly is, the impropriety of its use in this disease, however guarded by other combinations, is evident.

In the common *congestive* summer and autumnal fevers of this country, we are presented with an imperfect circulation; abdominal and thoracic congestions; pale, relaxed, and cold skin, sometimes covered with profuse cold sweat; pulse small, and almost imperceptible; cold extremities; impaired sensibility, and a general derangement of all the secernant functions. The vital energies are defective, or are at once depressed by the force of disease below the point of reaction; the whole system is, in fact, in a stage of collapse, from which nothing can rouse it, but the prompt use of the most powerful stimuli internally and externally. It is in fevers of this character, that quinine is too often freely used, under the erroneous impression that it is a stimulant and tonic. It only makes the fatal catastrophe more certain. If quinine, under any circumstance, be capable of removing congestion, it is only in vigorous constitutions, where the circulation is only partially oppressed, and where the external heat is not reduced below a normal state.

There are other cases likewise, in which quinine is pernicious. One is that peculiarly irritable and debilitated state of the whole animal functions most common in females, designated by the term *anemia*, (parops hæmatosis.) In cases of this kind, where corroborants and generous diet are essentially necessary, the judicious physician cannot administer quinine without speedily perceiving its pernicious tendency. In *gangrene* the sul. quinæ is highly pernicious. I should not have supposed it necessary to name this as an improper case for quinine, had I not seen it recommended as a substitute for bark and wine in gangrenous inflammation in a most respectable work on surgery.* I do decidedly believe there is no disease in the whole range of nosology, in which the use of this article would be more pernicious than in extensive gangrenous inflammation.

ART. III. *Effects of Lightning corrected by the cold affusion.*—Dr. Young, of Pennsylvania, has published in the Journal to which we have just referred, a case of recovery from a stroke of lightning, by the affusion of cold water. This remedy is not new, but it may be well, occasionally, to recall the attention of the profession to its effects; as the infrequency of such accidents, manifestly contributes to our forgetfulness of the most appropriate treatment.

* Principles of Surgery. By James Syme, F. R. S. E. &c.

"An hour after the stroke, the patient was entirely insensible to every external impression, with deep, slow, interrupted respiration; the relaxation of the muscular system was complete: the pulse, as to fullness, was nearly natural, it was soft, very easily compressible, and very slow, being only about 60, as near as could be ascertained by a second watch; the pupil was sensible, though fully dilated. In less than half a minute, the patient began to toss about and moan for the first time since the accident; by a continuance of the dashing for about five minutes, she appeared so much aroused, as was evinced by crying, endeavoring to talk, though without being able, tossing, and shrinking from the cold, that we discontinued its use, had her wet clothes taken off, and had her put to bed and covered up warm. After this, she was alternately still, and inclined to doze and sleep for a minute or two at a time, then to roll from side to side, moan, and seemed in great distress; the surface was cold, but the pulse harder, more frequent and quick; the pupils were contracted, and every thing indicated a change, approaching to reaction, to have taken place; I remained with her till 2 o'clock A. M., when it was established, she could talk and explain her sensations; she complained of very severe pain in the head, and I now apprehended danger from the opposite quarter, to anticipate which, I bled her to twenty ounces by estimate, keeping my finger on the pulse, and not stopping till there was a perceptible change in it; her head was bathed with cool vinegar, and as her feet were yet cold, they were enveloped in wetted horse-radish leaves; in half an hour she sunk into a composed, comfortable sleep, from which she did not rouse till half-past 7 o'clock. Finding the pulse again too active, and the patient still complaining of some headache, I again bled her twelve ounces, ordered a dose of Epsom salts to be given in three or four hours, with some other directions concerning diet, stillness, &c. and left her, with a request to be sent for, if it was thought necessary. I heard no more from her for a week, when she had almost entirely recovered from all the effects of the injury.

Might not this cold dashing be serviceable in cases of severe concussion from falls, blows, &c. when the patient lies for hours, and even days before reaction comes on? I have not had an opportunity of trying it, since I witnessed its effects in the above case, but I think it worth a trial."

ART. IV. *Chorea cured by the Actea Racenosa.* In the same periodical, the same physician has borne testimony to these effects of the Actea in *Chorea St. Viti.* A boy of 17 had this disease in one side only. His health otherwise seemed perfectly good. Without the least preparation, by the lancet, cathartic, or other means, he was put on the use of a tea-spoonful of the powdered root, three times a day. He was getting worse at the time; but was visibly better in two days, and, in

five, entirely cured. Dr. Young has treated others in the same way, with the same result.

ART. V.—*Fractures of the Thigh and Leg.*—We have received in exchange, the first number of a new quarterly periodical, entitled the *Baltimore Medical and Surgical Journal and Review*, edited by Professor Geddings, of the University of Maryland. It is handsomely gotten up, and contains a number of able articles; from the first of which, by Professor Smith, we shall make such extracts as will put our readers in possession of the professor's views on the subject announced at the head of this paragraph. In the following propositions our author sets forth the indications to be fulfilled in the treatment of fractures of the thigh and leg:

1. The leading indication in the treatment of fractures of the lower extremity, appears to me to be, to furnish such mechanical support for the injured member as shall, in as great a degree as possible, act as a substitute for the bone which has suffered fracture. To do this, in regard to those indispensable offices which the bone performs when the body is at rest, is, in a great degree, practicable, as we shall presently see.

2. The next great desideratum is, to furnish such a support or bed for the member, as shall diffuse the pressure, which the weight of the limb occasions, equally over the whole inferior semi-circumference of the leg and thigh. This indication is but very imperfectly accomplished by any apparatus hitherto described.

3. Another not less important object should be, to render the two former indications consistent with a change of posture in the patient's body, and, as far as possible, with freedom of motion in all other parts, the apparatus being an appendage of the body rather than of the bed, and moving with it in all unavoidable motions.

4. It is not less important to place the member in that attitude which shall most perfectly relax the muscles that operate on the fragments of the broken bone.

5. The apparatus should be such as to allow the attitude of the member to be occasionally varied, without the necessity of taking away the supports of the fractured bone.

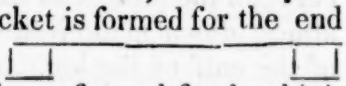
6. The supports of the limb should be such that, by the removal of some of its appendages, the surgeon, in compound fractures especially, may expose, examine the member, and, if necessary, renew dressings, without at all disturbing its posture or principal supports; in short, without allowing any motion of the fragments.

7. Permanent extension, for the purpose of counteracting the contraction of muscles, and obviating the imperfections of inadequate apparatus, is, in any efficient degree, absolutely impossible; and if all

the indications named above be satisfactorily accomplished, is altogether unnecessary.

On each of these propositions the professor has an extended commentary, which we shall pass over, for the purpose of presenting our readers with the description of an apparatus, and its mode of application, which he thinks better calculated than any other, to accomplish the various objects in view.

Description of the Apparatus.—The construction of the apparatus will be more intelligible, if it be stated in the first place, that it consists of four pieces, viz. two concave inclined planes, the one adapted to the inferior surface of the thigh—the other to that of the leg. These are united by a hinge corresponding to the knee. The third piece is for the foot, and the fourth is connected with the thigh piece and extends upward beside the body, and this we will call the hip piece.

The thigh piece is constructed thus. Two narrow pieces of strong oak, or other hard wood, are to be prepared, twelve and a half inches long, half an inch thick, and seven-eighths of an inch wide. A piece of very thick strong sheet iron, fifteen inches long and an inch wide, is next to be taken, and at each end it must be bent at right angles, first an inch from the end, then again an inch from this, and finally an inch from this last, so that at each end a socket is formed for the end of the piece of wood, an inch square, thus.  This socket is large enough to receive the piece of wood for the thigh and also the hip piece. Four holes are made in the sides of the socket by which to screw it to the wood. The piece of iron is now to be bent in the middle, so as to be adapted to the shape of the thigh, and must be bent in a direction opposite to that of the ends for forming the sockets. It should be bent more in the middle than the sides, so that it shall be deeper than a semicircle. Its span will be seven inches.—The two pieces of wood are now to have their upper ends placed in the sockets, and screwed tightly to them, leaving the outer part of the socket unoccupied, to slip in the hip-piece, as occasion may require. A semicircular bow of strong wire, with the ends flattened and perforated with holes for screws, is next to be screwed to the pieces of wood about two inches from their inferior ends. Its extremities are most conveniently screwed to the wood pieces on the outside. The span of this wire is six inches. Thus is formed the skeleton of the thigh piece. The concave floor is to be formed of strong cotton duck, (which I have found after several trials to be the best material) a broad piece of which is to be nailed on each side along the upper edges of the pieces of wood, and allowed to fall loosely between them so as almost to reach the concavity of the two irons. It should be deeper at the upper than at the lower part, to suit the tapering form of the thigh. It must be wrapped over the superior edge of the upper iron, (a piece of blanket being interposed to make the margin large and soft) and sewed to itself at the inferior margin of the iron. Thus we

have an easy, firm and well adapted surface for the thigh to rest upon. To secure the thigh in the splint, take a piece of poplar board one-tenth of an inch thick, twelve inches long, and six wide; glue a piece of strong domestic cotton to one of its surfaces, then split the wood in strips half an inch wide which will of course be held together by the cloth, but allowed to fold upon each other. Two leather straps are to be tacked across this, and by means of four buckles (two on each side attached to the side of the thigh pieces with pieces of leather and tacks) it is fastened to each side, and may be made to embrace the thigh with any degree of tightness. This is far better than a bandage, because making a more firm, steady and unvarying pressure.

Next we form the leg piece, of two pieces of wood of the same size as those of the thigh, but nineteen and a half inches long. They are permanently fixed parallel to each other, and five and a half inches apart, by means of two bows of strong iron wire, passing beneath and screwed firmly to the outside of each piece, the one about two inches from the superior, the other about four inches from the inferior, extremity of the pieces of wood. Thus the frame of the leg portion is formed. To form the concave floor to receive the calf of the leg, take a piece of cotton duck, about two and a half inches wide and seven inches long; nail the opposite extremities of this to the opposite pieces of wood, the superior margin being about an inch from their upper extremities. Let the middle portion sink loosely like a festoon. between the pieces, so that when the leg rests on it, it shall be pressed almost down to the iron bow. This cloth will receive the upper part of the calf of the leg. Another similar piece is to be attached about three inches from the inferior extremities, but as this receives the ankle, it must not sink so deeply between the pieces. These are the only permanent pieces of cloth which are used for this purpose; others are to be placed along the splint at the moment of applying it to the limb, and fitted to the calf of the leg all along, being fastened at the time with tacks to the side pieces, and accurately adjusted to the form of the limb by drawing the ends over the side pieces, until they are found to support their portion of the weight of the limb. By these the pressure of the weight of the limb is equally diffused.

The thigh and leg portions are now to be united by means of two hinges, one on each side. Each of these is formed of two pieces of very strong sheet iron, as wide as the pieces of ash used in the splint. The upper one, to be attached to the thigh piece, is five inches long. Two inches of its length are screwed to the outside of the thigh piece, and, of course, it projects three inches beyond it. An oblong slit is made in this, commencing at the end of the piece of wood and extending almost to the end of the iron, the slit being about two inches and a half long and a quarter of an inch wide. The end of this iron may be filed semi-circularly. The lower piece of the hinge is to be two inches and a quarter long. It is screwed in the same manner to the leg splint, and extends beyond the piece of wood only three quarters of an inch. In the centre of this projecting piece is a round hole, equal in diameter to the oblong hole in the other piece. These two pieces are now to be joined together with a thumb screw, the head of which

is on the inside, and the screw with the thumb piece, external. This hinge will allow of free flexion and extension, and as the screw may glide along the oblong slit, we may at pleasure elongate or abbreviate the thigh piece two and a half inches, which is as much as the thighs of different persons differ in length. When the thumb screws are tight, motion is checked; but something is necessary, when the splint supports the weight of the limb, to make it perfectly inflexible to any angle that may be desired. This is accomplished by attaching a narrow piece of sheet iron, four inches long, to the centre of the iron bow which fastens together the thigh pieces, by merely wrapping one of its ends round it, so as to form a sort of hinge. This piece is to have an oblong slit in it, beginning near the iron bow, and extending near to its extremity; it must also be bent so as to be convex upward. A hole should be made in the centre of the upper bow of the leg portion; then a thumb screw is put through this and through the narrow iron which (when the thigh and leg portions are bent upon each other) comes beneath it. When the screw is not close, the narrow iron will easily slide along the screw, and allow any angle to be formed, and the moment that it is tightly turned, the angle is permanently fixed.

The foot piece is formed of a half inch board cut in the shape of the sole of a shoe. Around the margin of the heel a piece of firm leather is nailed, projecting about two and a half inches, and designed to support the heel. An oblong slit is made in this piece of wood, beginning about an inch from the heel, and extending longitudinally about two and a half inches towards the toe. This is attached to the lower extremities of the leg portion, by means of a piece of sheet iron, as wide as the pieces of wood in the splint, and bent twice at right angles, so that when the side pieces of it are applied to the sides of the leg portion, they will overlap them externally, and the middle part will extend across the extremity from one piece of wood to the other. Each of the side portions of this iron has an oblong slit two and a half inches long, and there is a hole made in the end of each of the pieces of wood. By these holes the iron is attached with a thumb screw, and the oblong slit will slide up and down two inches or more, allowing us to elongate the leg piece in that degree. As they form a sort of hinge, the lower part of it may be elevated or depressed, thus giving any desirable inclination to the foot, which, as will be presently seen, is supported by this piece. A hole being made in the centre of the middle cross portion of this iron, the foot piece of wood, is to be attached to its inside with a thumb screw, passed through the oblong slit, the thumb portion being below. The foot piece will then glide up and down, and may be in a moment adjusted to receive any part of the weight of the foot and leg on the leather heel; or the toe may be turned out or in, to suit the right or left limb, and to give any desired inclination to the foot.

The hip piece is of ash or oak, nine inches long, a little convex externally, and concave internally, to suit the form of the hip. One extremity is to be rounded and fitted into the socket of the thigh splint, and it is to be fastened with a screw, so as to give it some degree of hinge-like motion. Its inner side is to have a thick compress of soft

may be removed, but the thigh piece must be retained; first, because it more effectually prevents motion at the place of fracture, and causes the splint to move with the body, and next because no more perfect support for the thigh can be devised, even if it were of no other use than for this purpose. When, however, the fracture of the leg is near the ankle, the thigh piece may be dispensed with. The leg piece must then be adjusted with great care, and particular attention must be given to the foot piece, for the proper support of the foot is the principal source of difficulty in these fractures. But with this apparatus we have complete command of it. We can fix the foot in a moment so as to be perfectly immovable, and can with great ease render its attitude precisely such as we desire. The toe should be a little inclined forward and outward, and the pressure should be carefully equalized between the ankle and the heel by elevating or depressing the foot piece. Deformity in these fractures, often results from the sinking of the heel. This we can with ease prevent without causing it to suffer from pressure, for the foot is partly supported on the wooden sole, and the leather for the heel is concave. Short splints of binders' board may be applied to the calf or shin if desired.

It will now be apparent, that, in dressing the injured member, there is no necessity for disturbing the supports in the least. All the bandages may be removed and the limb viewed as it lies in the hollow of the apparatus. If any of the slings are not sufficiently tight, they can be drawn up and adjusted. If it be a compound fracture, the wound can be dressed with perfect facility, and by placing a tin trough beneath it to conduct the water into a bucket, as we practice in the Baltimore Infirmary, a thorough ablution may be formed without disturbing even its posture.

It will be observed that I have not spoken of the many-tailed bandage. The apparatus above described, embraces the member so snugly, that I deem it altogether unnecessary.

The apparatus is equally applicable to injuries of the knee and ankle joints.

ART. VI.—*Admission of Air into the Veins.*—We do not recollect to have published any thing on this subject. The following case, extracted from the Boston Medical and Surgical Journal, may not be uninteresting to our surgical readers.

A mantuamaker, aged 18, of a feeble constitution, bore for many years past a scrofulous tumor at the superior and lateral part of the neck, which increased gradually every year. It was about the size of the head of a fœtus *a terme*, when the patient entered the hospital La Charite, the 27th Sept. 1832.

M. Roux decided to extirpate it. He made a crucial incision of the integuments, dissected up the flaps, dividing the cellular adhesions which united the tumor to the surrounding parts, and tying in his course some small arteries that threw out the blood. He then raised the tumor with the left hand, to continue the dissection, when suddenly a peculiar sound was heard, a kind of "sufflement," analogous to the

cloth nailed to it, and somewhat fashioned to the shape of the hip. The superior extremity extends to the lowest rib, or higher. This is secured to the body by a piece of strong cotton webbing, two yards long. To one end of this a buckle is attached, and the band is nailed to the outside of the hip piece, at right angles, so that the buckle shall be only a few inches from the piece and in front of the body. The other long tail of the band is now to be carried down behind the haunch—up along the perineum, between the thighs so as to embrace the thigh part of the apparatus at its upper part—then spirally up over the groin to the outer side of the hip, over the hip piece and then around the back—the left loin, and so completely round the body to the buckle, where it is to be secured. This I have found far more permanent and secure than the bandage.

The application of the apparatus may be thus effected. When the fracture is one of the thigh, it is applied entire. The surgeon causes the limb to be raised by assistants, the leg being bent at an easy angle on the thigh, and the splint bent to correspond. The apparatus is then brought under the limb by the surgeon, and the assistants let the member sink into the hollow for its reception, care being taken to press the upper margin of the thigh piece snugly against the perineum and the tuber of the ischium, against which it should rest. The surgeon then grasps the knee, and extending the thigh, coaptates the fragments. The leg is now laid into the corresponding portion, the foot being received into the foot piece, and the upper part of the calf and the ankle resting on the permanent slings. Other strips are now to be drawn under the calf, so as to receive their portion of weight, and are tacked to the side pieces. The anterior short splint is next to be buckled snugly over the thigh, a thick compress being first applied, and compresses being placed between the sides of the splint and the receding parts of the thigh and knee. The hip band is now to be buckled. Next, the surgeon takes a roller and beginning its application at the foot, at first binds the toe to the foot piece; then, he carries it spirally around the heel and splint, and brings it back again to the top of the foot around which it once more passes and then ascends upon the leg, making repeated turns as high as the knee, compresses being used to fill up all inequalities between the sides of the splint and the leg. Here it will be observed that each turn of the bandage gives new support to the leg beneath, and adapts the surface of the support more accurately. Should the length of either thigh or leg piece not correspond to that of the member, it may be adjusted in a moment, as heretofore described. The ankle may also be varied at pleasure.

The whole is then to be elevated from the bed, and suspended as I have already described. The hooks which hold the apparatus should be attached below the knee. At the Baltimore Infirmary, I use a matress which has an oblong portion in the angle, corresponding to the leg piece, cut out, so that the foot swings clear without being raised very high. This also causes the limb by its gravity to exercise some degree of traction on the muscles, and to assist in preventing the shortening of the limb.

When the fracture is one of the leg near the knee, the hip piece

III. ORIGINAL.

The Western Journal.

E SYLVIS NUNCIUS.

January 1, 1834.

INSULA OF YUCATAN.

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sound made by air when a small quantity of it (quelques bulles) enters the vacuum of an air pump. At the same moment the patient uttered a plaintive cry, throwing herself from one side of the bed to the other; the inspirations became long and painful; the respiratory muscles were seen to contract with force; the pulsations of the heart increased, the arterial undulations becoming more feeble. A rale was heard, produced by the passage of the air through the mucosities accumulated in the bronchiæ; the respiration became more and more heaving. Finally there supervened one long inspiration, followed by a short one, and all the apparent symptoms of death.

On the appearance of this accident, M. Roux suspected the introduction of air into the veins, compressed the wound with the fingers, caused frictions to be made over the precordial region, and glasses of cold water to be thrown upon the face; at the same time the nostrils were excited with the feather of a pen dipped in ammonia. After some minutes the heart was perceived to recommence its pulsations, and the respiration returned. The patient being questioned, was at first only able to stammer, and to express herself by interrupted sounds, similar to those made by patients who are affected with a paralysis of the vocal organs. A certain quantity of mucus now esc
ed from the mouth. Finally she commenced to articulate and to
plain of her trouble.

M. Roux discontinued the operation, tied the vessels, and
with a double ligature the tumor, three quarters dissec
tient was covered with very hot cloths, and she had
nately, every hour, a spoonful of ether and of Ma
the 5th day, no accident. On the 6th, the tumor
state, was taken away without difficulty. Sud
of the 7th day, she was seized with slight o
rassed, succeeded by a comatose state, and

Autopsy.—The wound was bounded b
the mastoid region, within by the lar
chea, on the outside by the poster
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infant daughter of Mr.
M. of this place, six months old. From
birth it had blueness of the t in all other respects it
seemed to enjoy perfect health. At the age of about two
months, it was suddenly attacked with an anxious, struggling
difficulty of breathing, amounting almost to suffocation, with
an increased lividness of the skin, particularly that of the
lips, fingers and toes. The pulse was increased in frequency,
and very irregular. The heart labored so greatly, as to agi-
tate the whole body of the child by its action. The parox-
ysm generally lasted about half an hour, leaving the patient
in a languid, exhausted, and placid state. Great care was
necessary in the dressing of it, as the least exertion or agita-
tion brought on an attack. It had from one to three of these
paroxyms every twenty four hours, for about two months and
a half, when I recommended a different nurse.

From this time the paroxysms almost ceased, as it had but
two or three for five weeks. From the time of the changing
the nurse, however, it declined in flesh, and died in about five
weeks.

On examining it after death, the *foramen ovale* was found
so open, as to permit the passage of a small quill, from one au-
ricle to the other. No other congenital defect existed. Some
parts of the intestinal parietes were thickened."

We saw this little patient several times, while its parents

II. Bad ...

A Kentucky correspondent ... article on the bad effects which ... portion of animal food, as is consumed ... United States. It is a sensible production ... some importance, but does not present sufficient ... of thought or fact, to justify its insertion. The w... rectly observes, that "man is so great a slave to h... tites, that were a prophet to rise from the dead, and ... warning of the bad effects of such indulgence, he would ... be heeded." We concur entirely in the opinion, that one cause of the great prevalence and mortality of inflammatory diseases in the United States, is an excessive use of animal food, leading to plethora and a phlogistic diathesis. It should be regarded as a professional duty, on all suitable occasions, to warn our friends and patients against this abuse.

III. Remedy for Gleet.

Another correspondent, of the State of Pennsylvania, has sent us for insertion, the following recipe for this obstinate affection:

"There are few practitioners of much experience, who have not sometimes been perplexed by the obstinacy of this complaint. Numerous are the cases where, after inflammation, heat of urine, and every *painful* symptom have been easily subdued, and patient as well as physician have considered the chief difficulty overcome, there is nevertheless left behind a constant oozing of their glary fluid, which withstands every endeavor to stop it. The complainant becomes impatient and uneasy, whilst his attendant can only lament over the failure of his best exertions.

After repeated trial of the means commonly advised and adopted, and as often encountering only disappointment and chagrin, I was induced to prescribe opium conjoined with borax, in the following proportions: Opium grs. vi, sub. bor. sod.

were on a visit to Cincinnati, and feeling desirous of witnessing the effect of the stimulating bath, recommended so strongly by Dr. Hossack, prescribed accordingly. Every attempt however, to immerse the unfortunate little sufferer, brought on a fit of crying; attended with so much dyspnœa, that it was necessary to discontinue the trials, before a fair experiment could be made. Its circulation was languid, and the skin much reduced in excitement. Its alvine discharges were slow and vitiated, calling for the use of cathartics. Some part of the intestinal derangement, arose, perhaps, from the use of laudanum, of which it took considerable quantities, and generally with advantage.

V. Acephalous Fœtus, living eight hours.

Dr. Jonathan Leatherman, of Cannonsburg, Pennsylvania, has communicated to us the following account of a *lusus naturæ*:

"A most singular exhibition of the aberrations of nature, occurred a few days since in the course of my obstetrical practice. Mrs. C., a woman of a healthy constitution, free from predisposition to any disease, was taken with labour pains, having, as she thought, exceeded her time *two months*, and was delivered of a female child, which presented the following peculiarities: That portion of the cranium which contains the cerebrum, was entirely wanting; and that which encloses the cerebellum, was but partially formed. The nose was perfect; the ossa nasi extending as far up as the junction with the os frontis. The ball of the eye was perfect, but needed the bones that cover it above and on the front side. It had all the voluntary motions, but those of the orbicularis palpebrarum were wanting. The temporal bones were imperfectly formed; the edge that joins the parietal being truncated, parallel with the petrous and mastoid portions. The ear was natural, except in size, which was smaller, by half, than common. The occipital bone extended up to half the distance between the crucial ridge and the foramen magnum. *The cerebrum, cerebellum, and medulla oblongata, were entirely*

wanting; and no traces of a tentorium could be discovered. There appeared a slight effort, however, on the part of nature, at the formation of a brain, or rather of its membranes; for two cysts, answering to the right and left hemispheres, and containing a serous fluid, were present. The membranes composing these cysts, were of a fibro-cartilaginous texture. A pair of forceps being introduced through the foramen magnum, a portion of medullary matter was extracted. Three tongues, or appearances of tongues, added much to the peculiarities of this astonishing freak of nature. One appeared to be an elongation of the uvula, gradually enlarging from its origin to the anterior extremity, where it was obtusely rounded. The passage of the posterior nares was obstructed by it. On its superior surface was a thin coat of very fine hair. Another originated from the right side of the mouth, and bore but a faint resemblance to a tongue. The third was natural in form and situation. This infant, as far as I was permitted to examine it, was perfect in every other respect; having the same power of its limbs, that other infants have. It was of a large size and healthy appearance, and lived eight hours after birth; during which time it manifested a fear of falling when handled, and all the usual signs of self-preservation."

VI. Poisoning by Oil of Tansey.

Within the past year, two persons have been destroyed in this city, by the distilled oil of the *Tanacetum Vulgaris*. They were both young women. To the first it was given by mistake: The second, supposed by various circumstances to have taken it, appears to have done so for the purpose of committing suicide. We have not been able to learn the symptoms which preceded death in these cases; but mention the fact by way of inspiring caution, as the oil of tansey is hawked about our streets with many other essential oils, and sold to those who are ignorant of its deleterious properties. Linnæus observes, that the natural order, *Compositæ*, embraces no poisonous plants, except *Tagetes*, *Doronicum*, and *Armi-*

ca. It is probable, however, that many others, subjected to distillation, would, like the *Tanacetum*, yield a deleterious principle.

ART. VII. NOTICE OF A SUDDENLY FATAL DISEASE, AT STANFORD, KENTUCKY, *in a letter to the Editor from L. G. Mullens, dated Nov. 20th*, 1833.

"Permit me to make some statements respecting a disease, that is now raging with great mortality in this vicinity. Almost every case has terminated fatally. I call it congestive fever, but there is great difference in opinion among the physicians here, respecting its nature and treatment. I will give you the symptoms, and our treatment, so that you may form an opinion, and I am in hopes throw some light on the subject." The first case was that of Mr. H. H., aged about forty-five, stout, and of a robust constitution and sanguineous temperament. Previous to his attack he worked hard all day, and ate a hearty supper. About midnight, he was taken with cold chills, soon followed with a violent pain in his head, redness of the eyes, delirium, attended with pain in his side and breast, great restlessness, a quick and hard, but not full pulse, involuntary sighing, sensation of weight about the pit of the stomach, and great nausea. His countenance soon acquired a look of extreme agitation, the skin was dry and hot, and the centre of the tongue white, but moist. Evidences of still greater irregularity of excitement soon developed themselves; the pulse now became small and hurried, the heat sharp and concentrated about the precordia, but lower than natural, in the wrists, ankles, forehead and lobes of the ears. In the beginning of the attack, Dr. Huff and myself, who were called on, bled him freely, under which operation his pulse became fuller and less frequent, but he was still affected with violent delirium, and could hardly be held in the bed. After the blood-letting, we gave him drastic purgatives, but found great difficulty in promoting an operation on the bowels, purgatives together with injections being exhibited throughout the night without much effect. The first dis-

charges were almost natural, but after a few evacuations, they became dark and very offensive. In the morning, the blood broke out from the arm. I let him bleed again freely, after which his pulse became small and his face bloated, but his skin, in spots, was dry and hot, and he remained entirely out of his senses; we then applied blistering plasters on the head, side, breast and extremities. In the morning of the second day of his attack, we again visited him, and found him somewhat more composed, but weak and considerably stupid. The cutaneous excitement still irregular, the surface being hot in some parts, and cold in others, and partially moist; the delirium continuing without intermission; his bowels were kept open by active purgatives. Towards night he became more composed, and got more in his senses; his skin also became generally moist, and he began to complain of his blistering plasters; but his eyes still continued red, and his countenance wild at night. We left him with medicines to keep his bowels open, and spirits of nitre to maintain moisture on the surface. In the morning we found him decidedly better; more in his senses, his pulse soft and regular, no particular pain, and his skin moist. We continued the antiphlogistic treatment. About the following midnight, the medicines failed to operate on his bowels, and he became so delirious and raving, that he could hardly be held in the bed; but by a more active course of purgatives, soon got his bowels into action, when he grew much quieter. We continued the same method, and under it he improved rapidly for several days; but still complained of great soreness of his head. His appetite at length became craving, and his system began to strengthen. But when all his symptoms were flattering, he ate grapes and persimmons, which threw him back with all the symptoms he first had; and after experiencing great torture, with delirium and a strong tendency to convulsions, he expired in a few hours.

Mr. A. H., the brother, died on the same night, about two hours from the time he was confined to bed. He was much more convulsed, and his case was attended with vomiting.

The following morning we left the family all in good

health. About twelve o'clock, Mrs. H., the widow of Mr. H. H., was taken with the same disease, and expired about ten o'clock at night.

Mr. J. C., a neighbor, who sat up with the family, was taken, a day or two afterwards, and the disease soon terminated fatally.

Other cases have occurred in the same neighborhood. We have been successful in the treatment of very few, as the disease terminates in death before the physician has much time to use efficient remedies. Indeed, as to the symptoms and result, the cases above cited may be received, so far as my observation has gone, as tolerably fair examples of the whole.

I and my medical friends would be much gratified to receive your opinion and advice relative to the nature and treatment of this malady, or that of any other physician, should you see proper to publish this hasty letter in the Western Journal."

Editorial Observations.

It cannot be doubted, we think, that in the cases narrated by Dr. Mullens, the brain was deeply implicated. But when a patient dies with an affection of that or any other organ, after an illness of a few hours, or a day, it certainly is not inflammation that destroys him. The time is too short for that variety of morbid action to establish itself, much less to run on to a fatal termination. Doubtless there was a great accumulation of blood in the brain, but the morbid action was epileptic, rather than apoplectic or arachnitic. We should presume that the cold dash or current on the head, after bloodletting, would have been serviceable.

As to the remote cause of this malady, we may suppose that it was nothing more nor less, than that which produced the late Epidemic Cholera, modified, however, by some other cause, of which we are equally ignorant. Great epidemics have often been preceded, attended and followed, by anomalous and fatal cases of disease, which the profession have,

generally, and we think correctly, referred to the unknown noxious agents that produce them.

We hope that some of our correspondents will elucidate this matter. We shall be happy to publish their speculations; and may here take occasion to say, that we think our Journal might be made a useful vehicle of communication among the physicians of the West; who could reciprocally afford advice to each other, on the new forms of disease which are perpetually arising. It would at all times gratify us to facilitate such a correspondence.

Art. VIII. Permanent Paralysis of one side of the Face, from disease about the angle of the Jaw.

Four years ago, we had an opportunity of collecting the following facts, from conversation with the patient, the Rev. H. C. T., of the State of Virginia.

Before he was quite a year old, several large boils or abscesses, the eschars of which still remain, formed behind, over, and in front of the angle of the lower jaw of the right side. The discharge from them continued for several months, and on ceasing, the left angle of his mouth was found to be drawn backwards. The opposite side, in fact, was partially paralysed, and has continued in that state ever since, a period of 34 years. He grew up a healthy and vigorous man, and has generally been very well. The right side of the forehead is smooth, and does not contract under the influence of the will; nor does the brow ascend, when he attempts to throw the occipito-frontalis into action. The right *posterior* extremity of that muscle, however, acts as perfectly as the left. The margin of the right upper eyelid, crosses the globe in the usual place; but that of the lower, is a little depressed. He cannot draw it up to the usual line, in attempting to close the eye, but can depress the other so as to cover about two-thirds of the open space between them. The whole right cheek is smooth and spread out. He cannot

expand the nostril of that side, and the depression above the cartilage is wanting. By an effort, he can draw snuff into that nostril; but less air passes through it, in ordinary, than through the other nostril. He can neither raise, depress, nor project the right angle of his mouth. The right brow has less hair, and is more flatted than the left; the frontal sinus is quite undeveloped; that of the other side, sufficiently prominent. All the movements of the eyeball are perfect; the vision of the eye is good, and in harmony with the other; the the eye is not inflamed, but a little watery. His mastication on that side is strong and perfect. His tongue straight when projected, and of the usual form, size, and capabilities. The taste and smell of the affected side, are like those of the other. The sensibility of the skin of that side, to cold and mechanical irritation, together with the colour, are natural. His voice is somewhat affected; but still he is not an unimpressive public speaker to the ear, though the movements of his face on such occasions are unpleasant to the eye.

The gentleman, of whose case I have given an account, applied to us for advice, but we could afford him none. It seemed quite obvious, that the portio dura, (facial respiratory nerve of Bell,) had suffered a permanent lesion, in his infancy, and that no remedy existed. Had this occurred after he had learned to talk, it is probable his speech would have been much more affected than it is. Trial and continued effort at imitation, would of course enable him to surmount the difficulties which were thrown in his way, at the early period in which he suffered the injury. *Perhaps* the trifacial nerve of that side gradually took on some degree of vicarious function, in reference to speech. It is worthy of remark, that the development of the os frontis of that side was affected by this injury.

Art. IX. Catalogue of the Plants of Kentucky.

Professor Short has put forth a *prodromus* of the *Flora* of Kentucky, of which a copy is now before us. It presents

444 genera, and 885 species. We take pleasure in seeing the names of many of our early acquaintances, particularly those of the *arbustum terra fertilis*, for the first time arrayed in alphabetical order; but fancy they would appear in greater dignity if scientifically arranged. We are glad to observe that Dr. S. has adopted the genus *Carya* of Nuttall, for our hickories, and separated them from the old genus *Juglans*. Long before Mr. N. established that family, we had observed such differences between the hickories and walnuts of the valley of the Ohio, as excited our astonishment that they should ever have been united under one generic head. Having a similar impression in respect to our box elder and sugar tree, we should have preferred to see the former (*acer negundo*) taken out of the genus of which the latter is the type. Among the medicinal plants of Kentucky, we notice several that are deserving of attention; as *actea alba* (*racemosa*,) *aralia spinosa*, *aristolochia serpentaria*, *arum dracontium*, *a. triphyllum*, *asclepias*, several species, *asarum Canadense*, *cassia Marylandica*, *cicuta maculata*, *conium maculatum*, *cornus florida*, and other species, *datura stramonium*, *dyospyros Virginiana*, *erigeron philadelphicum*, *eupotorium perfoliatum*, *euphorbia*, several species, *gentiana*, more than one species, *geranium maculatum*, *gillenia stipulacia*, *heuchera Americana*, *humulus lupulus*, *hydrastis canadensis*, *liriodendron tulipifera*, *lobelia inflata*, *monarda*, several species, *phytolacca decandra*, *podophyllum peltatum*, *polygala senega*, *prenanthes*, *prunus Virginiana*, *quercus*, the species generally, *rhus*, three or four species, *sabbatia angularis*, *salix*, *spigelia Marylandica*, and *ulmus Americana*.

This is certainly a promising catalogue, and it might be considerably extended. We regret to find so little attention paid, in these latter days, to our medical botany. It ought to present high and peculiar attractions to the physicians of the West, who, in general, have not the means of prosecuting physiological and pathological inquiries, but might engage with the brightest hopes, in pharmaceutic and clinical experiments, on our native plants.

Art. X. Cultivation of Botany in Ohio.

We take great pleasure in acknowledging the receipt of a port-folio of Ohio plants, collected, beautifully preserved, and accurately labelled, by Mr. Riddell, of the valley of the Scioto; to which they are indigenous. We hope that gentleman will continue his researches, especially into the herbaceous botany of our prairies and diluvial formations, with their lakes and morasses. Those tracts unquestionably produce many plants, not yet known to the science; and it would afford us great pleasure to make our Journal the vehicle of their publication.

Art. XI. Cincinnati Medical Society.

This is a society of emulation, instituted on the 4th of March, 1831, and incorporated during the last session of the Legislature. It embraces a majority of the physicians of the city, and holds weekly meetings for lectures and debates. About two months ago, it resolved on creating three new means of improvement, which are of sufficient general interest, to justify our stating them to the profession.

1. An *Herbarium*, especially of the medicinal plants of the West. Dr. Colby has been appointed its Curator, and, as we are authorized to say, will be happy to open a correspondence and carry on exchanges of specimens, with any western physicians who may choose to direct their attention to our native plants. Those who are not good practical botanists, from the want of the requisite books, would find it to their advantage, to send specimens to that gentleman; numbering them and keeping duplicates with the same numbers, in their own possession, which might be labelled according to the answers he should give. The society, moreover, would thankfully receive specimens of all kinds, as it is anxious to render its Herbarium, of immediate value to the profession.

2. A *Cabinet* of *Pharmacy*, which shall embrace, along with all kinds of pharmaceutic preparations, specimens of the various minerals belonging to our own and other countries, which are connected with the Materia Medica. Dr. Hermange has been appointed Curator of the Cabinet; and being a skillful practical chemist, will with pleasure, analyze any minerals of the West, that may be transmitted to him for that purpose.

3. A *Library*. A considerable sum of money has been contributed by members of the society, for this important object; and they have already presented more than 100 volumes as a foundation. Several gentlemen, not members of the society, as the medical professors of Transylvania University, and some who are not even physicians, have lent a helping hand, to this laudable undertaking; which is designed to embrace a number of periodical works—European as well as American. We trust that authors and publishers, who may see this notice, will be inclined to send copies of their works to the library.

The officers of the Society are—

Dr. Rives, *President*,
Dr. Henry, *Vice President*,
Mr. Wood, *Chairman*,
Dr. Shotwell, *Treasurer*,
Mr. Bonner, *Secretary*,
Mr. Dodge, *Librarian*,
Dr. Hermange, *Curator of the Cabinet*,
Dr. Colby, *Curator of the Herbarium*.

Art. XII. Report of the Commissioners appointed to inquire into the condition of the Medical College and Commercial Hospital and Lunatic Asylum of Ohio.

In two previous numbers, we mentioned the appointment and labors of this important commission. Their report to the Legislature has just reached us. The following are the recommendations it contains.

1. That the Board of Trustees be enlarged to twenty; one of whom at least shall reside in each judicial district of the State; seven to be designated by the Board itself, as a standing committee for the transaction of ordinary business; but no professor to be appointed or dismissed, or professorship created or abolished, without a concurrence of a majority of the whole board.

2. That each judicial district (nine in number) should send two indigent pupils, as beneficiaries, to attend the Lectures in the College.

3. That the Hospital law should be so altered, as to give to the Faculty of the College, the right to prosecute *post-mortem* examinations, in their *own* way, in that infirmary.

4. That the Lunatic Asylum should be separated from the Hospital, and new buildings erected, out of the city, but so contiguous, that the professors of the Medical College might give their attendance upon its inmates.

From the late period in which this report reached us, we have only time to make a few remarks on each of these recommendations.

This is the fourth time, that the necessity of an enlarged Board of Trustees, partly resident in different portions of the State, has been urged upon the General Assembly, within the last six years. First, in the winter of 1827–8, by the Medical Convention of Ohio, meeting at Columbus; second, by the Standing Committee of the Senate on Medical Colleges and Societies, in 1830–31; third, by the Third District Medical Society, and the General Medical Society of the State, in the winter of 1832–3; fourth, by the Board of Commissioners appointed to inquire into the validity of the charges, which have at various times and by different persons, been made against the present Board. How this subject will be viewed by the present General Assembly, we do not pretend to foresee. To ourselves the case presents itself in this wise: There is much opposition to the present Trustees, and it cannot be doubted that this opposition is prejudicial to the school—a new and enlarged Board would vanquish this opposition or

remove the just causes, if any exist, which have excited it.

The mode of selecting beneficiaries recommended by the Commissioners, is perhaps, since the repeal of the medical law, and the abolition of the district societies, as good as any other could be devised.

The recommendation to give to the Faculty of the College the right to prosecute *post-mortem* examinations in the Hospital, uncontrolled by its Trustees, is indispensable to its becoming a good clinical school. As the Commissioners have observed, the Trustees being elected annually, can have no settled policy on this subject; and are far less competent than the Faculty of the College, to devise a beneficial course.

What the Commissioners have said on the state of the Lunatic Asylum, is eminently entitled to the attention of the Legislature. From its foundation, it has been discreditable to the State; and until made the subject of new legislation, will continue imperfect and inadequate.

We should add, that one of the Commissioners does not concur with his colleagues in the recommendation of a new Board of Trustees for the College; and proposes, as a substitute, to make the Judges of the Supreme Court, *ex officio*, the visiters of the institution.

Art. XIII. Repeal of the Medical Law of Ohio. Qualified Approval. Suggestions about another Law.

Our last Legislature repealed the law regulating the Practice of Medicine, a fact we forgot to mention to our distant readers, in either of the preceding numbers of this volume. This was an ancient law of our State. Twenty two years ago, we recollect to have made a winter visit to Chillicothe, for the purpose of attending the first convention under that law. Dr. Canby, of Lebanon, and Dr. Parsons, of Columbus, also attended, and Dr. Scott and Dr. Edmiston, of Chillicothe, were delegates; but five could not form a quorum, and no convention was organized. From that time forward to last winter, Ohio had, nearly or all the time, a law constitu-

ting the physicians of the State into district societies, authorising general societies, and denouncing quackery under heavy penalties. But during this period, it took deeper root in our community than any other in the Union; and has even established a college and journal of its own! A memorable example of the inefficiency of Legislation, when *popular* sentiment does not co-operate. We have no doubt, that the laws of Ohio have contributed to rear the seat, on which empyricism now sits enthroned. The people have never looked to the execution of the Medical law, and when a society has at any time endeavored to enforce it, they have taken sides with the *oppressed!* A perception of the total inefficiency of the law, led the General Medical Society, at its last meeting, to petition the Legislature for its repeal; the prayer was granted, and the corporation making it dissolved. We cannot help thinking, however, that the members of that respectable body, might have devised some intermediate course, that would have been preferable, not as to the suppression of quackery, but the improvement of the profession. They could have recommended the abolition of licenses, penalties and disabilities, but retained the organization into districts and a General or State society, and thus have made it a means of promoting scientific and professional improvement. It was the prevailing neglect of the means of such improvement, that rendered us all indifferent to the continuance of the law.

Having never ourselves been other than an honoray member of the General society, we have had no opportunity, personally, of urging upon that body, to occupy itself in its annual meetings, on subjects of scientific research; but on the approach of its last meeting, we ventured to address to it a memorial, suggesting several subjects for its consideration; before, however, it reached the Capital, the members had dispersed, and soon afterwards, the law under which they assembled, was repealed. Believing that some of the suggestions contained in that communication, are worthy fixing the attention of our brethren throughout the State, we shall

briefly set forth a few of them, in the manner in which they now present themselves:

1. Had the District Societies been preserved, or rather were they to be revived, (not to regulate the practice of physic, but to promote scientific research,) every one would contain a body of inquirers, who would aid and animate each other, in various useful labors. It would be but a few hours' ride from the most remote point of a District, to the place of meeting, and thus frequent conventions of its intelligent, enterprising and zealous physicians, might be held. At these meetings, they might report and compare their modes of practice in the current and the endemic diseases of the District, and thus reciprocally improve each other's practice.

2. They might appoint a meteorologist for the District, and, supplying him with a thermometer, barometer, hygrometer, electrometer, pluviameter, vane, and other instruments for estimating atmospheric phenomena, enable him to keep, and report at stated periods, to the society, a valuable climatorial register.

3. Each society might form an *herbarium*, of the plants within its limits, which would inspire and gratify a taste for Botany among its pupils; while experiments might be instituted on those which are curative, and new medicinal virtues ascertained.

4. Every society might form a cabinet of the minerals within its District; noting their localities, and the relations they bear to each other.

5. A library of current and periodical works might, at a small expense, be established, which would put all the members in possession of the improvements that are daily made in the profession elsewhere; and which might, for a small compensation, be made accessible to the poor students of the District, many of whom prosecute their studies in books the most inappropriate.

6. The different societies might reciprocally exchange specimens of plants and minerals, until each would acquire a part of what had been collected by every other.

7. Once in two or three years, each District might elect two or more of its distinguished members, as delegates to a State society, to meet annually in *Columbus*, at a pleasant and healthy season. This society should continue in session for a number of days, and consider itself to be a learned association, convened for important purposes. To this society, the Districts should send copies of their meteorological registers; topographical, mineralogical, and geological descriptions of their Districts; reports of new and difficult forms of disease; an account of new remedies; and all such other observations, discoveries and inventions, in medicine and the collateral sciences, as might be regarded of interest to the profession. From the mass of communications thus made, the General Society might select such as seemed worthy of preservation, and arrange them into a volume of transactions. Such a volume might be published annually, differing in size according to the varying number of valuable communications before the society. Every physician of the State, not to look further, would undoubtedly purchase a copy of it, and that would be sufficient to defray the expense of publishing.

From this simple method, many important advantages would result.—A laudable emulation would be excited among the physicians of each District, and the different Districts would soon come to vie with each other, in labors for the advancement of the profession; the advantages of students of medicine, while in their private pupilage, would be greatly improved; and materials for an accurate history of the diseases, climate, medical plants, medicinal springs, and useful minerals, would be rapidly accumulated,—results of the deepest interest to the Profession, and the State at large; and which, without an associated effort, are not like to be attained in a century.

Many subordinate benefits, it may be conceived, would, from time to time, be the natural consequences of the action here recommended. We shall refer to one only. The place of meeting of each society, might be made a place of deposit for *Vaccine infection;* and thus the most remote and insulated members of the profession be supplied and incited to

its employment; while occasional publications, by the Districts, or the General Society, addressed to the people at large, might rouse them from their lethargy, and speedily diminish the number, amounting no doubt to hundreds of thousands, who are now liable to be destroyed by the small-pox.

Under these various impressions, we beg leave to recall the attention of the *Profession* and the *Legislature*, to the subject of a Medical Law, which, while it should confer no power on the incorporated body, to regulate the practice of medicine, or establish fees, should embrace all the graduates and licentiates of the State, and all the members of the late District Societies, who might still be alive. The right should not be granted to the Districts, of imposing fines upon their members for non-attendance, nor of *collecting* taxes from them by judicial process; but each corporation should be at liberty to exclude from the use of its library, cabinet, herbarium, and vaccine deposit, all members who might neglect to aid in their establishment and support.

XIV. School for the Instruction of the Blind.

It must gratify every friend of humanity, and raise a feeling of laudable pride in the heart of every citizen of Ohio, to hear of the successful operation of the school for the *Education of the Deaf and Dumb*, at Columbus. The effects already produced in the short space of five years, would do credit to an older community than ours; and are an encouraging earnest, of the many blessings it will confer on those who are born to perpetual silence, in the midst of this noisy world.

Among the various advantages that result from such a humane institution, is this: that it awakens the tenderness of the people at large, and predisposes them to new enterprises of beneficence. Under this conviction, we think it a favorable time, to present to the consideration of our *General Assembly*, of the *Profession*, and *Society at large*, the establishment in Columbus, of a sister *Institution for the Education of the Blind.*

The number of these unfortunate persons, we mean to in-

clude those only who are children, or were such when they became blind, is far greater than is generally supposed. For several years, we have professionally, been devoted, in an especial manner, to the treatment of Diseases of the Eye, and every month has presented us with new evidences, of the great number of blind children and youth, within our own State. Many of these were born blind, and might, of course, be cured; but a much larger number became so, in infancy or childhood, from inflammation of the eyes, and their cases are generally irremediable. A large proportion of these are the children of poor parents, and belong to the country, where sore eyes prevail more than in the towns, and are too often subjected to no medical treatment, till incurable blindness is produced. Thenceforth, the child becomes a permanent charge on its parents or friends—often on the township—and passes its life, not only deprived of the enjoyments of sight, and all the benefits of intellectual education, but with the painful consciousness, of being a perpetual burthen on those about it; while, if educated, its happiness would be greatly increased, its moral faculties and affections ameliorated, and its bodily powers made available, to its own support.

The education of the Blind, like that of the Deaf, cannot be conducted at home, even when parents, from their wealth, have the necessary leisure. Specific methods and qualified teachers are indispensable; and if such could be obtained, in sufficient numbers, and all who have blind children had the means of compensation, the progress of the pupil, would be in no degree equal to what it is, when associated in a school, with others, laboring under the same infirmity.

It is then, obviously the duty of every State, to institute and support a school for the education of the Blind; in which not only their intellectual and moral faculties should be cultivated, but they should be taught some mechanical occupation, of a useful kind, the prosecution of which would enable them to earn a livelihood, and raise them from a state of dependence on their friends or the community. Such institutions have existed for some time, in Europe, and have lately been established in Pennsylvania, New York and Massachusetts,

with the most beneficial results. As yet, there is not one in the Valley of the Mississippi, where the proportion of *poor* blind children, is greater, perhaps, than in any other part of the Union. Ohio has nearly one third of the population of the Great Valley, and why should she not be the first to institute this noble charity? Having nearly completed, and brought into productive operation, several magnificent public works, her present resources are every way adequate to the humble, but still dearer object, of instructing those unfortunate children, who, without such advantages, can never participate in the enjoyment which every citizen derives from contemplating these honorable achievements.

It is not our design at this time, to go into an analysis of the methods by which the Blind are taught. In point of dignity, and the ingenuity manifested in their invention, they are every way equal to those for the education of the Deaf; and their application calls, equally, for public appropriations and the fostering superintendence of the State.

To all our readers, whether physicians or students of medicine, we would say, do not consider your duties of humanity discharged, by doing professionally what may be in your power, to avert one of the greatest of human afflictions; but as it is an effect of disease, and is therefore connected with the profession, make it your aim to urge upon society, the duty of alleviating the distresses which follow in its train.

To the General Assembly, now deliberating on the public good, we would respectfully address a solicitation still more earnest. They preside over all the interests of the State; some of these are conspicuous, and force themselves upon legislative attention; others are retiring, unobtrusive, and scattered among the habitations of the poor. The intellectual wants of the Blind, are of this class; and for this very reason, must become objects of attention, to a magnanimous legislature. Let the subject, then, of an Institution for the Education of the Blind, be at least referred to a committee, with instructions to collect and report to the next session, the information necessary to legislative action.

Art. XV. Education Convention of Kentucky.

It affords us great pleasure to say, that the Education Convention of the State of Kentucky, announced, in our last number, was well attended. On the invitation of the Rev. Mr. Peers, acting President of Transylvania University, we had the pleasure, with several distinguished gentlemen of Ohio and other States, of sitting in the Convention as an honorary member; and marked the progress of its deliberations with much gratification. Many of its members were gentlemen of talents and general influence; among whom we noted not a few of our own profession. The Convention adjourned, to meet in Frankfort on the 9th inst., when it is expected that a still larger number will attend, and that a variety of measures will be commenced, which must, in their consummation, improve the schools, academies and colleges, of that respectable and prosperous State.

All this is as it should be; and it is meet and proper, that the oldest member of the western sisterhood should be the first to hold a State Convention for the improvement of her institutions of learning, and the elevation of her literary character. The beneficial effects of such improvement, will speedily manifest themselves in various ways, but in none more strikingly than the amelioration of the condition of the medical profession of that State, already highly respectable in every thing but its literature, which even now is not inferior to that of any other State in the west.

Art. XVI. Introduction of Tropical Plants into Florida.

Dr. Perrine, for several years our Consul in the Province of Yucatan, has been making zealous efforts to naturalize a variety of tropical plants in West Florida; and has memorialized Congress on the subject of a grant of lands for that purpose. In reference to our national resources, and, especially, to our Materia Medica, the object is one of considerable interest, and ought to be encouraged by the profession. We

trust that those who may think with us on this matter, will be willing to exert whatever influence they may possess over their representatives in Congress, for the purpose of furthering this important experiment, which must necessarily be attended with many difficulties and sacrifices.

Art. XVII. Winter Residence for Consumptive Patients.

We beg leave to direct the attention of the reader, to the remarks on this subject, contained in p. p. 336–8 of this number. From previous information we were prepared to agree in the recommendation of Florida, as a winter retreat for the infirm, in preference to any other part of this continent, or even the island of Cuba. New Orleans, to which many in the West direct their attention, is too cool and humid; while Cuba, although unexceptionable in climate, is highly objectionable in its political and social character.

Art. XVIII. Subsidence of the Cholera in the West. Health of Cincinnati.

Since the beginning of Autumn, we have heard of no Epidemic Cholera in the Valley of the Mississippi. It seems to have subsided with our Bilious Fevers. In Cincinnati, for the last two months, we have not heard of a single case, under all the variety of powerful, exciting causes to which our people have exposed themselves. The city, moreover, in reference to other diseases, has been highly favored.

By consulting the bills of mortality for November and December, during a period of five years, we are enabled to institute the following comparison:

1829	November	and	December	88 deaths.
'30	do	do	136	do.
'31	do	do	163	do.
'32	do	do	139	do.
'33	do	do	94	do.

The population of the city at the present time, is considerably beyond what it was in 1829, so that the proportional

mortality of the months of November and December of this year, is less than it was for the preceding four years. The contrast which it makes with that of 1831, is striking. That was the autumn preceding the appearance of the Cholera among us. Had the atmospheric deterioration then begun, and is the great healthiness of the present period, to be considered as an evidence that the distemperature has *finally* ceased? This is at least a pleasant speculation.

Art. XIX. Medical Classes in the West for 1834.

Medical College of Ohio, 113, of whom 10 are beneficiaries.
Transylvania University, in Lexington, Ky., 250.
Dr. McDowell's Anatomical Class, same place, 110.

Art. XX. Medical Obituary.

John Woolley, M. D. We neglected to mention in our last number, the death of this gentleman, for many years a respectable physician and citizen of this place. He was a graduate of the first class of the Medical College of Ohio, in the spring of 1821, For many years he was one of the Censors of the First District Society; and in the winter of 1827–8, acted as president of the Medical Convention of the State.

Thomas Sargent, M. D. of Apoplexy, on the 29th December. Dr. S. was an emigrant from Philadelphia. He united in himself the clerical and medical professions. The fatal attack seized him in the pulpit of one of the Methodist Episcopal churches of this city. He was a good physician, an amiable man, and a zealous and exemplary Christian.

William Gardner, M. D., of the Western Reserve, in this State. We have had some correspondence with this gentleman, and were led to regard him as a highly-respectable member of the profession. We hope some of his friends will furnish us with a condensed obituary.